



# Parker Sporlan Refrigeration & Air Conditioning Catalogue

aerospace  
 climate control  
 electromechanical  
 filtration  
 fluid & gas handling  
 hydraulics  
 pneumatics  
 process control  
 sealing & shielding



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Parker Sporlan Refrigeration & Air Conditioning Europe  
is a Division of Parker Hannifin.

With sales exceeding \$ 13 billion in fiscal year 2014,  
Parker Hannifin is the world's leading diversified manufacturer  
of motion & control technologies and systems providing  
precision-engineered solutions for a wide variety of mobile,  
industrial and aerospace applications.



We employ approximately 57.500 people in 50 countries around the world.

At Parker, we're motivated by a relentless drive to help our customers make anything possible.  
It means looking at customer applications from many angles to find new ways to create value.

Whatever the motion and control need, Parker has the experience, breadth of product  
and global reach to deliver consistently. No company knows more about motion than Parker.

The group is actively present on several technology markets and is a pioneer in innovation  
in many areas such as: Aerospace, Hydraulics, Filtration and Process Control.

For further information, please call us on 00800 27 27 5374.





# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374



## Aerospace

### Key Markets

Aftermarket services  
Commercial transports  
Engines  
General & business aviation  
Helicopters  
Launch vehicles  
Military aircraft  
Missiles  
Power generation  
Regional transports  
Unmanned aerial vehicles

### Key Products

Control systems & actuation products  
Engine systems & components  
Fluid conveyance systems & components  
Fluid metering, delivery & allocation devices  
Fuel systems & components  
Fuel tank inerting systems  
Hydraulic systems & components  
Thermal management  
Wheels & brakes



## Climate Control

### Key Markets

Agriculture  
Air conditioning  
Construction Machinery  
Food & beverage  
Industrial machinery  
Life sciences  
Oil & gas  
Precision cooling  
Process  
Refrigeration  
Transportation

### Key Products

Accumulators  
Advanced actuators  
CO<sub>2</sub> controls  
Electronic controllers  
Filter driers  
Heat exchangers  
Hose & fittings  
Pressure regulating valves  
Refrigerant distributors  
Safety relief valves  
Smart pumps  
Solenoid valves  
Thermostatic expansion valves



## Electromechanical

### Key Markets

Aerospace  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Paper machinery  
Plastics machinery & converting  
Primary metals  
Semiconductor & electronics  
Textile  
Wire & cable

### Key Products

AC/DC drives & systems  
Electric actuators, gantry robots & slides  
Electrohydraulic actuation systems  
Electromechanical actuation systems  
Human machine interface  
Linear motors  
Stepper motors, servo motors, drives & controls  
Structural extrusions



## Filtration

### Key Markets

Aerospace  
Food & beverage  
Industrial plant & equipment  
Life sciences  
Marine  
Mobile equipment  
Oil & gas  
Power generation & renewable energy  
Process  
Transportation  
Water Purification

### Key Products

Analytical gas generators  
Compressed air filters & dryers  
Engine air, coolant, fuel & oil filtration systems  
Fluid condition monitoring systems  
Hydraulic & lubrication filters  
Hydrogen, nitrogen & zero air generators  
Instrumentation filters  
Membrane & fiber filters  
Microfiltration  
Sterile air filtration  
Water desalination & purification filters & system



## Fluid & Gas Handling

### Key Markets

Aerial lift  
Agriculture  
Bulk chemical handling  
Construction machinery  
Food & beverage  
Fuel & gas delivery  
Industrial machinery  
Life sciences  
Marine  
Mining  
Mobile  
Oil & gas  
Renewable energy  
Transportation

### Key Products

Check valves  
Connectors for low pressure  
fluid conveyance  
Deep sea umbilicals  
Diagnostic equipment  
Hose couplings  
Industrial hose  
Mooring systems & power cables  
PTFE hose & tubing  
Quick couplings  
Rubber & thermoplastic hose  
Tube fittings & adapters  
Tubing & plastic fittings



## Hydraulics

### Key Markets

Aerial lift  
Agriculture  
Alternative energy  
Construction machinery  
Forestry  
Industrial machinery  
Machine tools  
Marine  
Material handling  
Mining  
Oil & gas  
Power generation  
Refuse vehicles  
Renewable energy  
Truck hydraulics  
Turf equipment

### Key Products

Accumulators  
Cartridge valves  
Electrohydraulic actuators  
Human machine interfaces  
Hybrid drives  
Hydraulic cylinders  
Hydraulic motors & pumps  
Hydraulic systems  
Hydraulic valves & controls  
Hydrostatic steering  
Integrated hydraulic circuits  
Power take-offs  
Power units  
Rotary actuators  
Sensors



## Pneumatics

### Key Markets

Aerospace  
Conveyor & material handling  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Transportation & automotive

### Key Products

Air preparation  
Brass fittings & valves  
Manifolds  
Pneumatic accessories  
Pneumatic actuators & grippers  
Pneumatic valves & controls  
Quick disconnects  
Rotary actuators  
Rubber & thermoplastic hose & couplings  
Structural extrusions  
Thermoplastic tubing & fittings  
Vacuum generators, cups & sensors



## Process Control

### Key Markets

Alternative fuels  
Biopharmaceuticals  
Chemical & refining  
Food & beverage  
Marine & shipbuilding  
Medical & dental  
Microelectronics  
Nuclear Power  
Offshore oil exploration  
Oil & gas  
Pharmaceuticals  
Power generation  
Pulp & paper  
Steel  
Water/wastewater

### Key Products

Analytical instruments  
Analytical sample conditioning products & systems  
Chemical injection fittings & valves  
Fluoropolymer chemical delivery fittings, valves & pumps  
High purity gas delivery fittings, valves, regulators & digital flow controllers  
Industrial mass flow meters/ controllers  
Permanent no-weld tube fittings  
Precision industrial regulators & flow controllers  
Process control double block & bleeds  
Process control fittings, valves, regulators & manifold valves



## Sealing & Shielding

### Key Markets

Aerospace  
Chemical processing  
Consumer  
Fluid power  
General industrial  
Information technology  
Life sciences  
Microelectronics  
Military  
Oil & gas  
Power generation  
Renewable energy  
Telecommunications  
Transportation

### Key Products

Dynamic seals  
Elastomeric O-rings  
Electro-medical instrument design & assembly  
EMI shielding  
Extruded & precision-cut, fabricated elastomeric seals  
High temperature metal seals  
Homogeneous & inserted elastomeric shapes  
Medical device fabrication & assembly  
Metal & plastic related composite seals  
Shielded optical windows  
Silicone tubing & extrusions  
Thermal management  
Vibration dampening

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# Refrigeration & Air Conditioning Europe Parker Sporlan

Parker Sporlan Refrigeration & Air Conditioning Europe belongs to the Instrumentation platform which has the mission to provide comfort, convenience and control for a better quality of life.

Our European Headquarters are in Padova, Italy where our R&D, marketing, application support, as well as product management are located.

With our main brands Parker, Sporlan and Virginia we are active on many markets: residential and commercial air conditioning, transport refrigeration, food preservation, ice machines and heating.

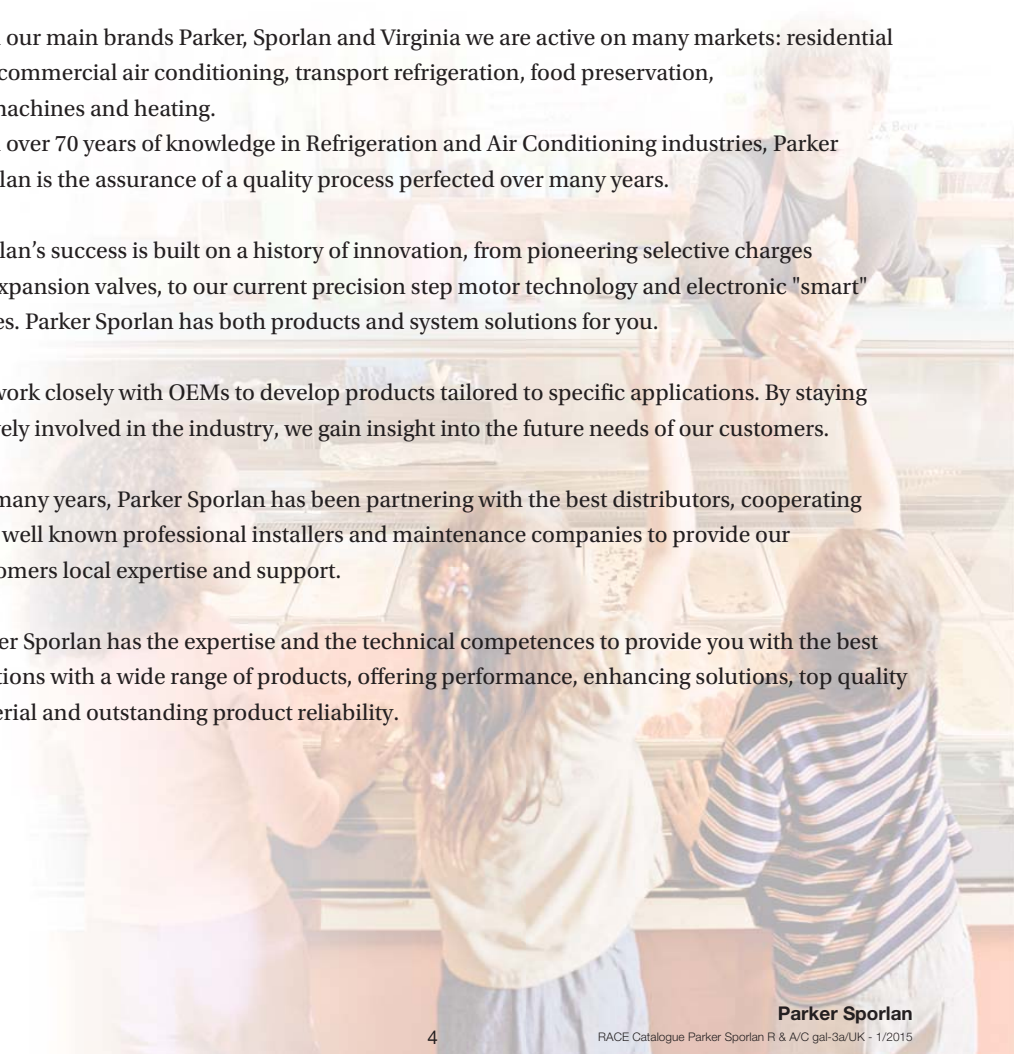
With over 70 years of knowledge in Refrigeration and Air Conditioning industries, Parker Sporlan is the assurance of a quality process perfected over many years.

Sporlan's success is built on a history of innovation, from pioneering selective charges for expansion valves, to our current precision step motor technology and electronic "smart" valves. Parker Sporlan has both products and system solutions for you.

We work closely with OEMs to develop products tailored to specific applications. By staying actively involved in the industry, we gain insight into the future needs of our customers.

For many years, Parker Sporlan has been partnering with the best distributors, cooperating with well known professional installers and maintenance companies to provide our customers local expertise and support.

Parker Sporlan has the expertise and the technical competences to provide you with the best solutions with a wide range of products, offering performance, enhancing solutions, top quality material and outstanding product reliability.

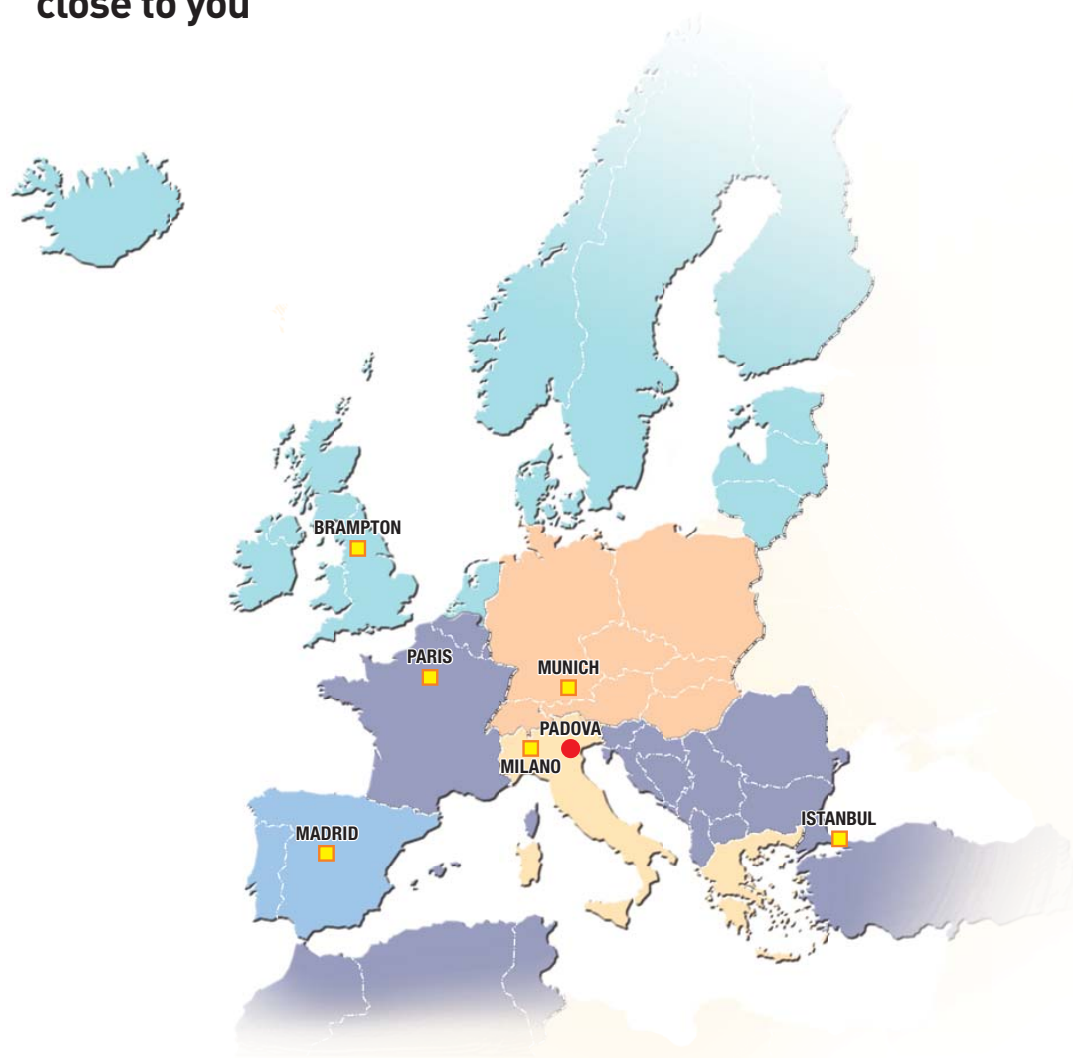


# Parker Sporlan Applications Markets

<p style="text-align: center;"><b>Refrigeration</b></p>	<p>Food Retail</p>	<p>Food Preservation</p>	<p>Food Service</p>	<p>Transportation</p>
	<p>Compressor Racks</p>	<p>Vending Machines</p>	<p>Display Cases</p>	<p>Ice Machines</p>
	<p>Catering Equipment</p>			
<p style="text-align: center;"><b>Air Conditioning</b></p>	<p>Residential</p>	<p>Commercial</p>	<p>Industrial</p>	<p>Transportation</p>
	<p>Heat Pumps</p>	<p>Air Handling Units</p>	<p>Chillers</p>	<p>Roof Tops</p>
	<p>Bus &amp; Rail AC</p>			

Super Heat Controller, Variable Speed Drives, Electronic Expansion Valve, Filter Dryers, Receivers, Accumulators, Pressure Regulating Valves, Solenoid Valves, Copper Fittings, Lubricants, Maintenance Products, Suction Line.

## RAC - Europe Commercial Sales close to you



● Head Office

■ Sales Office

## Supply Chain

In 2002 Parker Hannifin Corporation developed the Win Strategy program to ensure that Parker offered "Premier Customer Service" to all its customers, this strategy is followed up on a daily basis to ensure we meet a target of 98 % on time delivery.

In order for Parker to meet this criteria we have in place a dedicated multi-lingual supply chain team whose goal is to work with our customers to ensure that we anticipate and meet their needs, by collecting market information and forecasts. This gives an insight into the economic and production needs of our customers. This in turn allows us to plan, manufacture and procure goods in a timely manner and reduces the risk of late deliveries to our customers.

We have a 12.500 m<sup>2</sup> state of the art European distribution centre based in Bielefeld Germany which employs 200 people with a 15.000 pallets storage capacity. We are able to combine strengths of many Parker businesses to enhance our customer service and reduce costs, by offering daily deliveries to most countries within Europe.

We also store & distribute refrigeration lubricants & chemicals from a 5.500 m<sup>2</sup> warehouse in Brampton, United Kingdom, where shipments are made daily to countries all over the world.

Currently we have 5.000 active references of which over 3.000 are currently held in stock. We ship over 3.000 lines of products to our customer each month.

**Our commitment to our customers is to have the right product at the right time to ensure we achieve our goal of providing Premier Customer Service.**

## Research and Development

With momentum in new product development and an intensified focus on systems, Parker Sporlan is filling the product development pipeline with exciting new opportunities that are new to the world and new to the markets we serve. We have also extended our research and development relationships by developing collaborative agreements with a variety of research institutions.

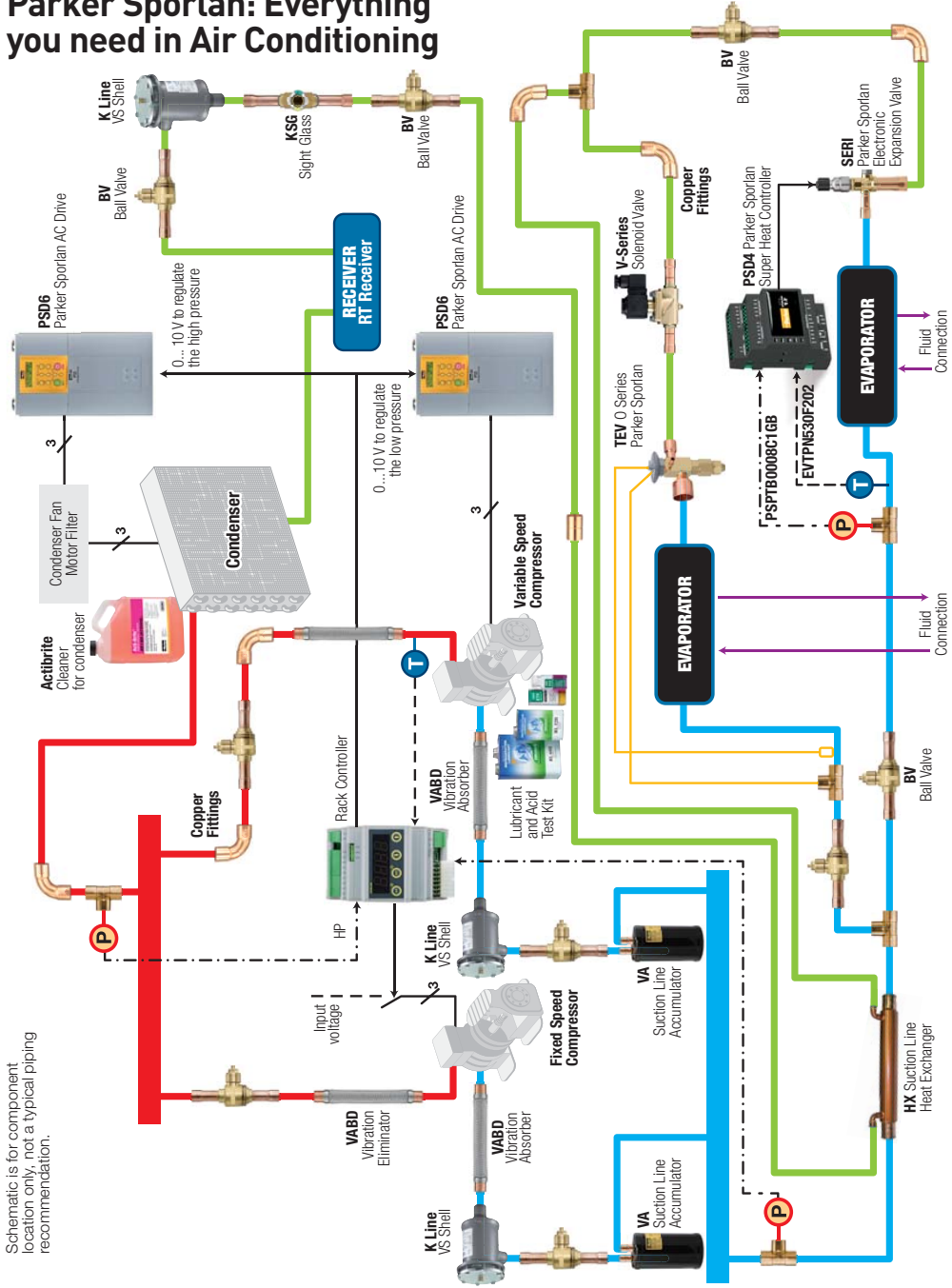
With our European R&D team we develop, in our laboratory facility based in Padova, the new generation of products and systems to provide the products and solutions our customers need in the future. Particularly in the area for new refrigerant development and energy efficiency.

We also leverage our engineering expertise and breadth of product and systems with the other Parker R&D centers to create breakthrough innovations which anticipate, rather than react, to your needs.

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# Parker Sporlan: Everything you need in Air Conditioning

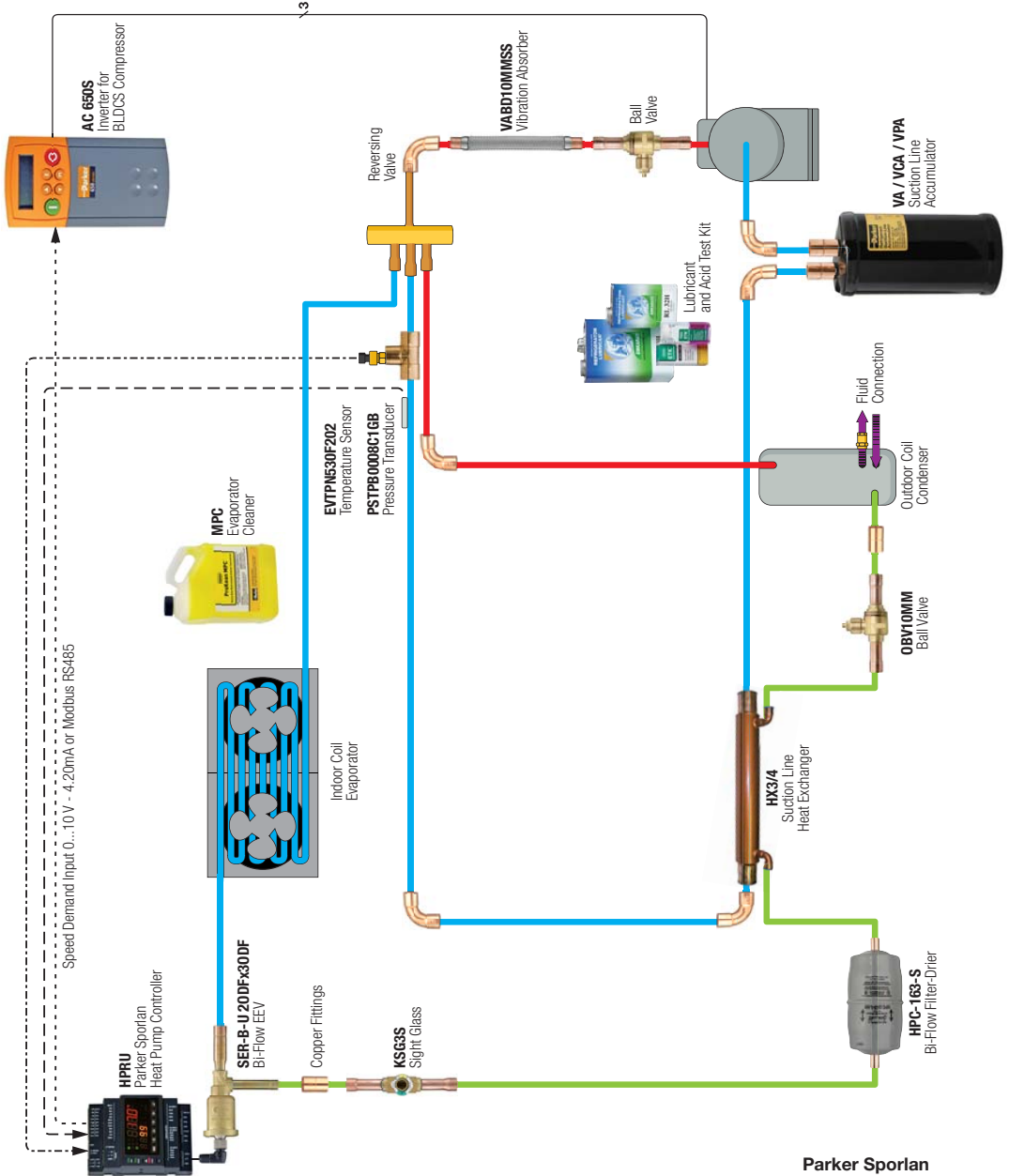


Schematic is for component location only, not a typical piping recommendation.

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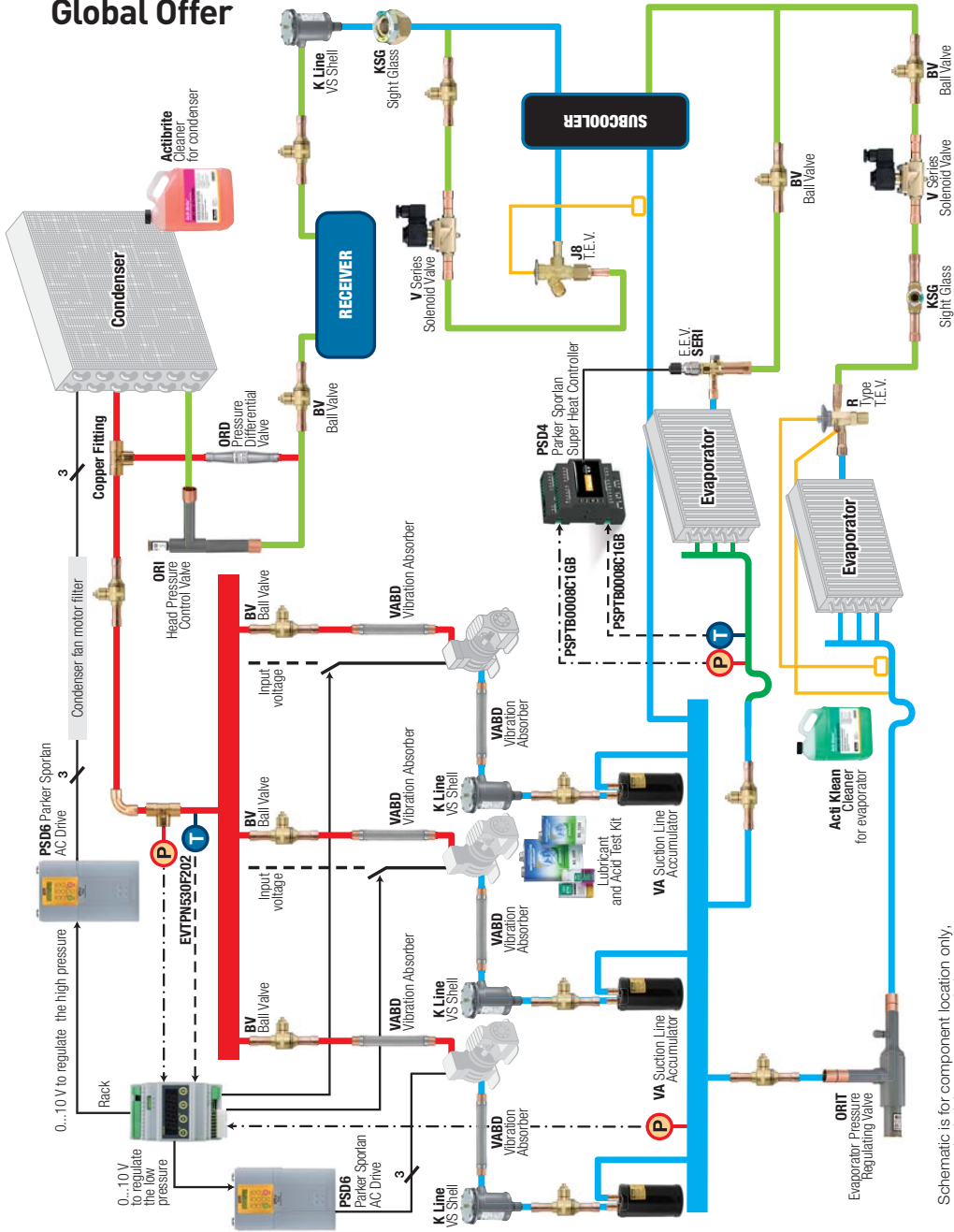
# Heat Pumps Market: Parker Sporlan Perfect Match

Schematic is for component location only, not a typical piping recommendation.



**Parker Sporlan**

# Parker Sporlan's Refrigeration Global Offer



Schematic is for component location only, not a typical piping recommendation.

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## Electric Expansion Valves

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



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## 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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## Electronic Expansion Valves

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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-B, -C, -D

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

### SERI-F, -G, -J, -K, -L

<b>SERI</b>	-	<b>J</b>	<b>S</b>	<b>7/8"</b>	<b>X</b>	<b>1-1/8"</b>	<b>ODF</b>	-	<b>10</b>	-	<b>S</b>
Valve Family		Valve Model	Straight Through Offset Configuration (blank if angle)	Inlet Connections Size		Outlet Connection Size	Fitting Type ODF only		Cable Length 10' (3 m) standard		Stripped and Tinned cable ends

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth. Sporlan Electric Expansion Valves (EEVs), now rated at full stroke (100% open) with no reserve capacity, are currently available in nominal R-22 capacities from 2.5 to 434 tons (8.2 to 1424 kW), and can control refrigerant flow down to 10% of rated capacity. Therefore, they are applicable on all the same types of systems found in the air conditioning and refrigeration industries as thermostatic expansion valves. Sporlan electric valves are designed for compatibility with all current halocarbon refrigerants (HCFCs and HFCs including R-410A), in addition to subcritical CO<sub>2</sub>.

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 g/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			

### Certification:

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



### Benefits

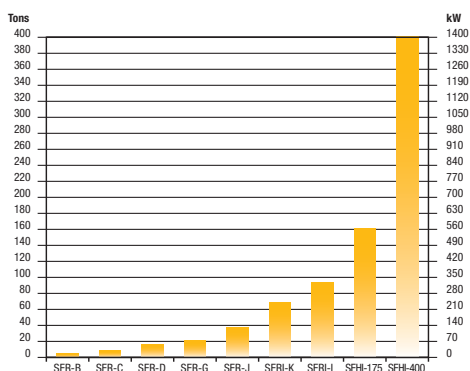
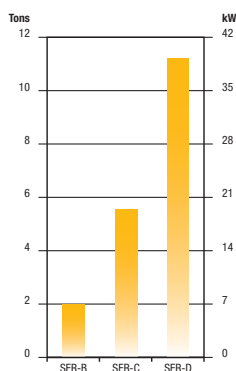
- MOPD up to 40 barg in both directions
- Wide flow control
- Step motor operated for precise control
- High resolution drive assembly
- Field proven reliability
- Low power consumption - less than 4 watts
- Unique built-in sight glass - indicates valve operation, moisture levels and refrigerant quality (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		10, 20, 30, 40	3, 6, 9, 12	
SEHI-175	1-1/8, 1-3/8, 1-5/8	2-1/8	Straight Through Offset			
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-407C at 100°F (38°C) liquid, 100 psi (7bar) pressure drop, and 40°F (5°C) evaporator temperature.

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## Selection Tables

### R-134a

Capacities in kW at Evaporator Temperature °C

Valve Type	5°C								-10°C								-20°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	13.0	2.5	4.0	5.5	7.0	8.5	10.0	11.5	13.0
<b>R-134a</b> 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	4.48	5.67	6.65	7.50	8.27	8.97	9.62	10.2
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	12.2	15.4	18.0	20.3	22.4	24.3	26.1	27.7
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	24.7	31.3	36.7	41.4	45.6	49.5	53.0	56.4
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	47.1	59.5	69.8	78.7	86.7	94.1	101	107
SERI-J	94.4	119	140	158	174	189	202	215	88.6	112	131	146	164	176	191	202	84.6	107	126	142	156	169	181	193
SERI-K	171	216	254	286	315	342	367	391	161	204	238	269	296	321	344	366	153	194	228	256	284	307	329	349
SERI-L	233	295	346	390	430	466	500	532	221	280	328	370	408	442	474	504	211	266	312	352	388	421	452	480
SEHI-175	406	514	602	680	749	813	871	926	381	482	566	638	704	762	818	869	365	461	540	609	672	728	781	831
SEHI-400	839	1061	1244	1404	1547	1678	1799	1913	796	1006	1180	1331	1467	1591	1707	1814	758	959	1124	1268	1397	1516	1625	1728

### R-407C

Capacities in kW at Evaporator Temperature °C

Valve Type	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
<b>R-407C</b> 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	5.83	7.14	8.25	9.22	10.1	10.9	11.7	12.4
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	15.8	19.4	22.4	25.0	27.4	29.6	31.6	33.5
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	32.2	39.4	45.5	50.8	55.7	60.2	64.3	68.2
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	59.1	72.4	83.6	93.5	102	111	118	125
SERI-J	117	144	166	186	204	220	235	249	111	136	156	175	192	208	222	235	106	131	151	168	184	199	213	226
SERI-K	213	261	301	336	369	398	426	452	201	246	284	318	348	376	402	427	193	236	273	305	334	361	386	409
SERI-L	298	365	422	472	517	558	597	633	284	348	402	449	492	532	568	603	274	335	387	433	474	512	548	581
SEHI-175	506	619	715	800	875	946	1012	1073	478	585	675	765	827	894	955	1013	458	561	647	724	793	856	915	972
SEHI-400	1073	1315	1518	1697	1859	2008	2147	2277	1022	1252	1446	1616	1770	1912	2044	2168	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-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

1

### R-407A/F

Capacities in kW at Evaporator Temperature °C

Valve Type	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
<b>R-407A</b> SER-B	5.83	7.14	8.24	9.21	10.1	10.9	11.7	12.4	5.53	6.77	7.82	8.74	9.58	10.3	11.1	11.7	5.31	6.51	7.51	8.4	9.2	9.94	10.6	11.3
SER-C	15.8	19.3	22.3	24.9	27.3	29.5	31.5	33.5	15	18.3	21.2	23.7	25.9	28	29.9	31.7	14.4	17.6	20.3	22.7	24.9	26.9	28.8	30.5
SER-D	32	39.2	45.3	50.6	55.5	59.9	64	67.9	30.4	37.2	43	48	52.6	56.8	60.8	64.4	29.2	35.8	41.3	46.2	50.6	54.6	58.4	61.9
SERI-F	47.3	57.9	66.8	74.7	81.9	88.4	94.5	100	44.8	54.9	63.4	70.9	77.7	83.9	89.7	95.1	43.1	52.8	61	68.1	74.6	80.6	86.2	91.4
SERI-G	61.7	75.6	87.3	97.6	107	115	123	131	58.6	71.7	82.8	92.6	101	110	117	124	56.3	68.9	79.6	89	97.5	105	113	119
SERI-J	111	136	157	175	192	207	222	235	105	129	149	166	182	197	210	223	101	124	143	160	175	189	202	215
SERI-K	201	246	284	318	348	376	402	427	191	234	270	302	331	357	382	405	183	225	259	290	318	343	367	389
SERI-L	274	335	387	433	474	512	548	581	260	318	367	411	450	486	520	551	250	306	353	395	432	467	499	530
SEHI-175	476	583	673	752	824	890	951	1009	451	553	638	714	782	844	903	957	434	531	613	686	751	811	867	920
SEHI-400	985	1207	1394	1558	1707	1844	1971	2090	935	1145	1322	1478	1619	1749	1870	1983	899	1100	1271	1421	1556	1681	1797	1906

Valve Type	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
<b>R-407F</b> SER-B	6.4	7.83	9.05	10.1	11.1	12	12.8	13.6	6.12	7.49	8.65	9.67	10.6	11.4	12.2	13	5.91	7.24	8.36	9.35	10.2	11.1	11.8	12.5
SER-C	17.3	21.2	24.5	27.4	30	32.4	34.6	36.7	16.6	20.3	23.4	26.2	28.7	31	33.1	35.1	16	19.6	22.6	25.3	27.7	30	32	34
SER-D	35.1	43	49.7	55.6	60.9	65.8	70.3	74.6	33.6	41.2	47.5	53.2	58.2	62.9	67.2	71.3	32.5	39.8	46	51.4	56.3	60.8	65	68.9
SERI-F	51.9	63.6	73.4	82	89.9	97.1	104	110	49.6	60.8	70.2	78.5	86	92.9	99.3	105	48	58.8	67.8	75.9	83.1	89.8	96	102
SERI-G	67.8	83	95.8	107	117	127	136	144	64.8	79.4	91.7	102	112	121	130	137	62.6	76.7	88.6	99	109	117	125	133
SERI-J	122	149	172	193	211	228	244	258	116	143	165	184	202	218	233	247	113	138	159	178	195	211	225	239
SERI-K	221	270	312	349	382	413	442	468	211	259	299	334	366	395	422	448	204	250	289	323	354	382	408	433
SERI-L	301	368	425	475	521	562	601	638	287	352	407	455	498	538	575	610	278	340	393	439	481	520	556	589
SEHI-175	522	640	738	826	904	977	1044	1108	499	612	706	790	865	934	999	1060	483	591	683	763	836	903	966	1024
SEHI-400	1082	1325	1530	1711	1874	2024	2164	2295	1035	1267	1463	1636	1792	1936	2070	2195	1000	1225	1415	1581	1732	1871	2000	2122

#### Liquid Temperature Correction Factors

°C	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60
<b>R-407A</b>	1.76	1.68	1.61	1.53	1.46	1.39	1.31	1.24	1.16	1.08	1.00	0.92	0.83	0.74	0.64
<b>R-407C</b>	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
<b>R-407F</b>	1.74	1.66	1.6	1.52	1.45	1.37	1.3	1.23	1.15	1.08	1.00	0.93	0.84	0.77	0.68

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## Selection Tables

### R-404A

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	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

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

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

1

## 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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°C  
 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
	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

R-507A	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	3.72	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

R-507A	Valve Type	-40°C							
		Pressure Drop Across Valve bar							
		4	6	8	10	12	14	16	18
	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

1

### 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	-	-	-	-	-	-	-	-	-	-

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## Selection Tables

### R-422D

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	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

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

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

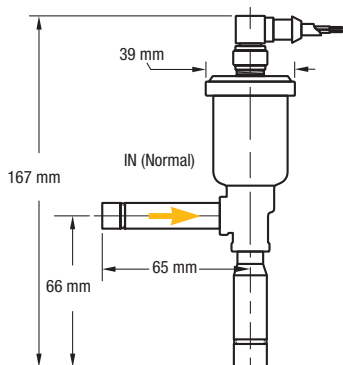
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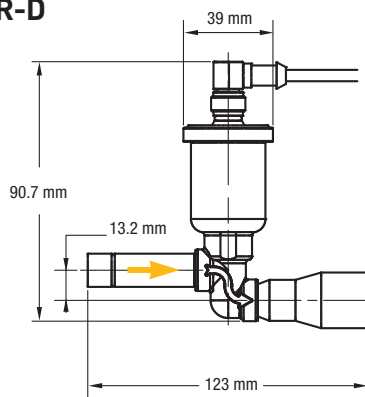


## Valve Dimensions

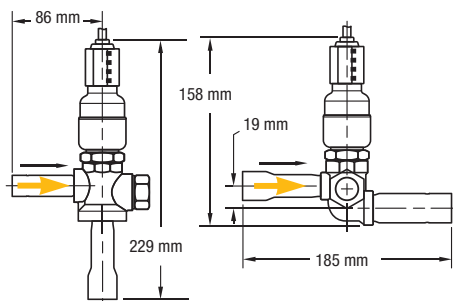
**SER-B, -C**



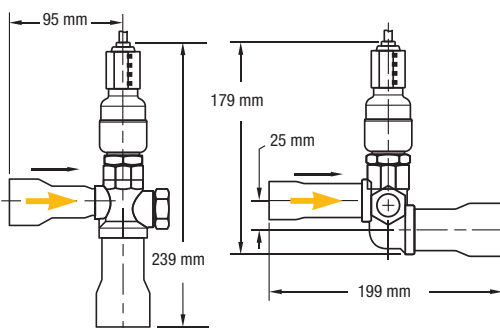
**SER-D**



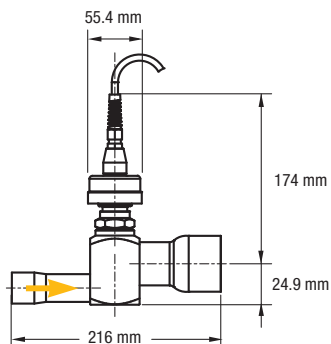
**SERI-G & SERI-J**



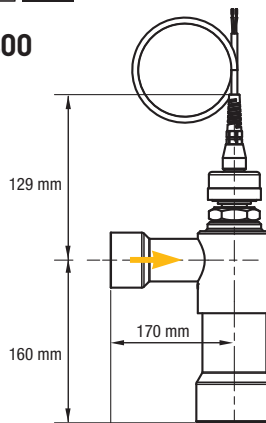
**SERI-K & SERI-L**



**SEHI-175**



**SEHI-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	Angle	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	Special order valve
*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

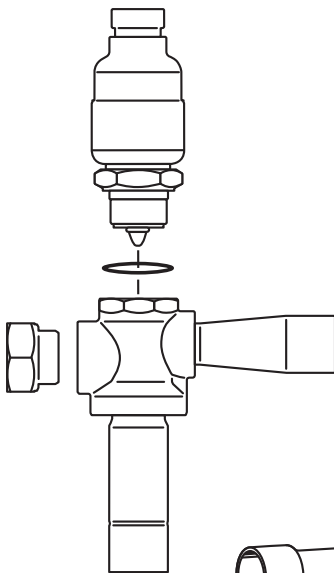
Valve Type	KIT No.	Part Number
SERI-G	KS-SERI-G	958184
SERI-J	KS-SERI-G	958185
SERI-K	KS-SERI-K	958186
SERI-L	KS-SERI-L	958189
SEHI-175	KS-SEH-175	958126
SEHI-400	KS-SEH-400	380821

### Cable Assembly Kit

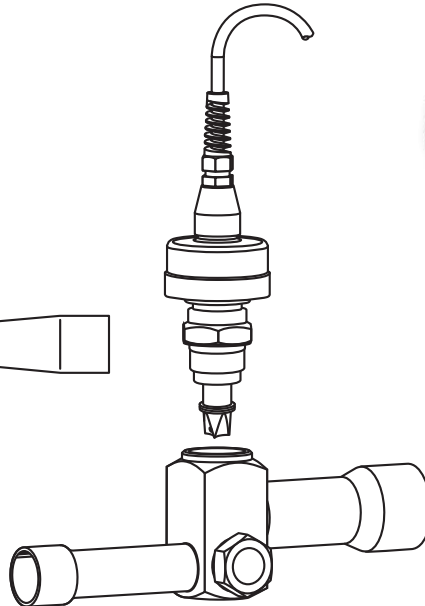
for Electric Expansion Valves

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**



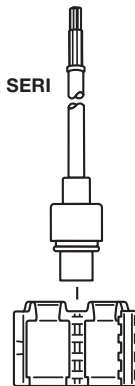
Motor Kit **SEHI**



Cable Kit **SER**



Cable Kit **SERI**



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## Components and Accessories

Product	Parker Part Number	Description
	PSD4BX3	Superheat Controller no display
	PSD4DF3	Superheat Controller with LCD display & Modbus - Canbus
	(x) insert communication option S = Stand alone, C = CANbus, M= Modbus, I = Intrabus	
	EVTPN530F202	Temperature probe, NTC 103 AT-2, -50°C to 110°C, 3 m long
	EVPT5108	Fast response Pressure Transducers, 2 wires 4/20mA, 0 to 8 bar, 8 to 28 VDC
	EVPT5130	Pressure Transducers, 2 wires 4/20mA, 0 to 30 bara, 8 to 28 VDC
	PSPTB0008C1GB	Pressure Transducer 4-20 mA -1 to 8 barg
	PSPTB0015C1GB	Pressure Transducer 4-20 mA -1 to 15 barg
	PSPTB0030G1GB	Pressure Transducer 4-20 mA 0 to 30 barg
	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 Stepper Motor Actuator

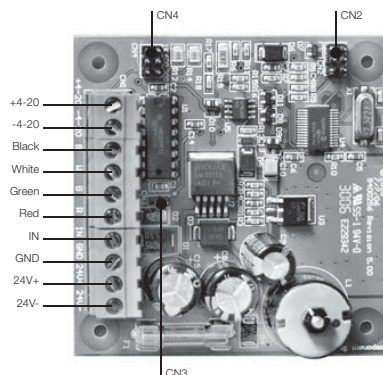
The SMA-12 is designed to diagnose systems with stepper motor valves by proving operation of the stepper motor. The unit is powered by two 9 Volt alkaline batteries and will power any standard 12-Volt DC bipolar step motor. Step rate is selectable at 1, 50, 100 or 200 steps per second and will stroke 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 Sporan electric expansion valves stepper motor to be modulated in response to an externally generated signal. The IBQ accept a 4-20 mA, or 0-10 Volt DC inputs and stroke the valve proportionately to that signal.

While the IBQ will control Parker Sporan'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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# Superheat Controller

Bipolar stepper motor driver  
for Parker Sporlan Electric Expansion Valves



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# PSD4

## Superheat Controller for Bipolar Electric Expansion Valve

Stepper motor driver to control Parker's range of SER & SEH Electric Expansion Valves



The **PSD4** stand alone, bipolar stepper motor driver, has been designed to work with Parker Sporlan's family of, **SER** and **SEH** Electronic Expansion Valves, to control the superheat. The PSD4 improves the superheat by controlling the difference between the actual temperature and the saturation temperature of the refrigerant.

If the valve should lose power, the electronic expansion valve needs to close to avoid liquid refrigerant flood back to the compressor, for this reason each valve can be delivered with a battery back up unit, type PSS4B.

The standard stand alone **PSD4**, has no display but is available with a communication port. Programming can be done by connecting **PSKEY**, for fast download or upload of parameters, via the on board programming port, or from the hand held LCD programming tool, **PSV4GBR**, which can also be used for trouble shooting.

Network communication options are available. The **PSD4** can be ordered with the following protocols cards fitted, Modbus RS485, CanBUS, & Intrabus.

**PSD4** is ideal for air conditioning and refrigeration application such as: air conditioning, chillers, heat pumps, packaged rooftop units, process cooling, and cold room.

Please contact your sales representative to check availability of this product. Thank you.

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## Super Heat Controller

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# Refrigeration & Air Conditioning

## PSD4 Super Heat Controller

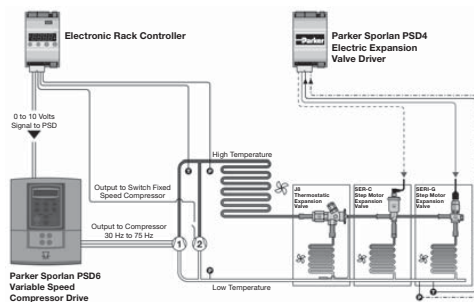
Parker Sporlan **PSD4 Super Heat Controller** provides a complete solution for controlling the Superheat in air-conditioning and refrigeration applications.

### Benefits:

- 65 years of manufacturing high quality refrigeration components
- Experience you can rely on, 10 years development of valves & super heat controllers
- Improved evaporator performance, with matched valves & controller, lowering energy costs
- Widest range of cooling capacity, from SER family of electric expansion valves up to 2000 kW (SEH)



Drive Systems for Refrigeration  
Compressors and Condenser Fans



- Outputs bipolar stepper for Parker Sporlan EEV
- Voltage supply 24 VAC +10% -15%
- 50/60 Hz +/- 3 Hz
- Ambient temperature range -20 to +60 °C (@r.H < 95% non-condensing)
- Protection IP20 (with connectors fitted)
- DIN rail mounting EN60715
- CE & Low Voltage Directive EMC 2006/95/EEC / 2004/108/EC
- Safety & Conformity - EN60730 / IEC 60730-1
- UL & CSA - UL 60730-1A / CSA 60730-1
- RoHS & WEEE - 2002/95/EC / 2002/96/EC

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## Options

### EVPT5108

Steel Pressure transducers, 0.5 to 8 bar working pressure, power supply 8-28 VDC, 4-20 mA output 2 wire. 7/16" male - 20 UNF threaded tip

### EVPT5130

Steel Pressure transducers, 0 to 30 bar working pressure, power supply 8-28 VDC, 4-20 mA output 2 wire. 7/16" male - 20 UNF threaded tip

### EVTPN530F202

Fast response temperature Probes NTC 10kOhm @ 25°C Overmoulded bulb -50 to 110°C

**PSPTB0008C1GB** Pressure Range -1 to 8 barg

**PSPTB0015C1GB** Pressure Range -1 to 15 barg

**PSPTB0030G1GB** Pressure Range 0 to 30 barg

**PSPTB0050G1GB** Pressure Range 0 to 50 barg

Stainless Steel Pressure transducer, power supply 8 to 28 Vdc, 4-20mA output 2 wire. 7/16" 20 UNF threaded tip female connection, including access pin for Schraeder valve.

### P2NZ3000

DIN connector for pressure transducer series PSPT

### CP2N03000AA25

5 meter PVC cable with DIN connector fitted for transducer series PSPT

### PSS4B

SuperCap EEV closing unit (typically < 10 s) if power supply is lost. Contact Parker-Race for more details.

### PSIF20TUXI

TTL/USB serial interface for upload and download of parameters via the programming software

### PSKEY10

Parameter quick set up key

### PSV4GBR

Remote mounting LCD (128 x 64 pixel) programming panel, 118 x 10 mm, RTC, alarm, buzzer, isolated 12-24 VAC/DC power supply mounting accessories available.

### PSPS

Power supply for PSKEY10 115-230 VAC / 9 VDC

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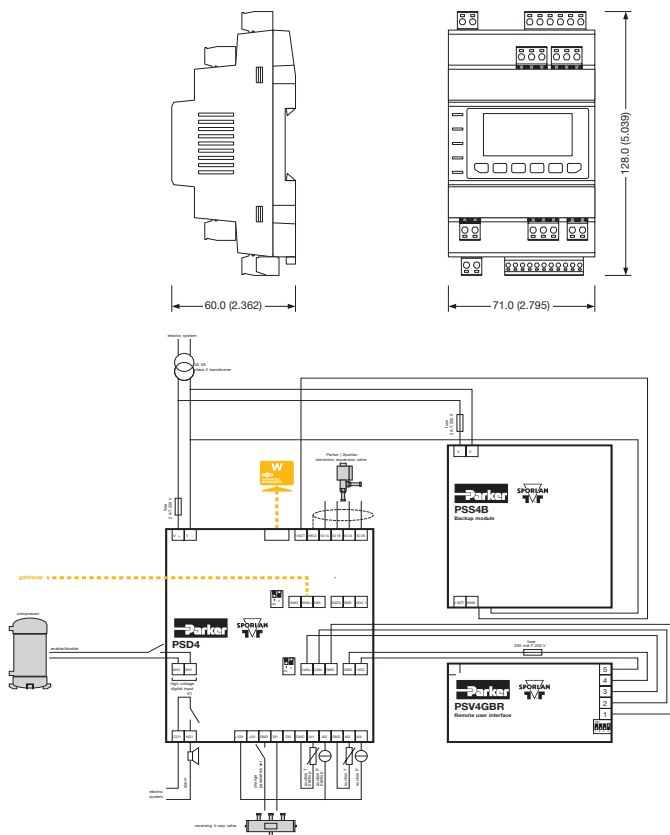
# Order Selection Guide PSD4

Va. c.	Hz	A/I	D/I	D/O	SO	BS	PP	SP	CB	RS	DP
--------	----	-----	-----	-----	----	----	----	----	----	----	----

PSD4 Super Heat Controllers NO DISPLAY												
PSD4BX3	24	50/60	4	3	1-5 A	1	✓	1	1	-	-	-
PSD4BM3	24	50/60	4	3	1-5 A	1	✓	1	2	-	✓	-
PSD4BC3	24	50/60	4	3	1-5 A	1	✓	1	1	✓	-	-
PSD4BF3	24	50/60	4	3	1-5 A	1	✓	1	3	✓	✓	-

PSD4 Super Heat Controllers DISPLAY												
PSD4DF3	24	50/60	4	3	1-5 A	1	✓	1	3	✓	✓	✓

**Key:**  
 A/I = Analogue input - D/I = Digital Input - D/O = Digital Output - SO = Stepper Output - BS = Battery Back Up - PP = Programming Port  
 SP = Serial Port - CB = CANBus - IN = INTRABUS - RS = Modbus RS-485 - DP= Display Fitted (LED)\* LED.



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## SER - SEH

Valves & Driver PSD4

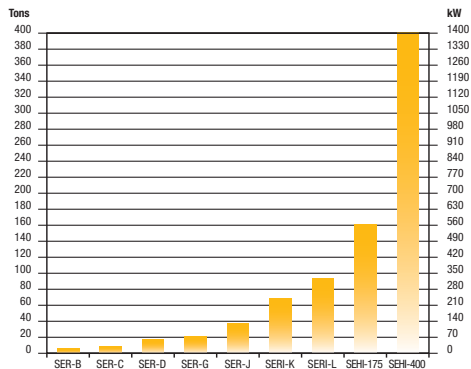
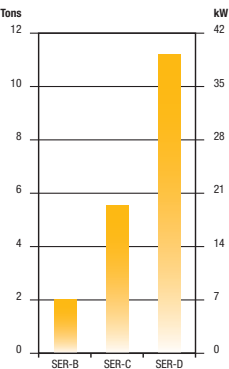


2

## SER - SEH

Electronic Expansion Value Capacity Charts

Capacity



R-407C at 100°F (38°C) liquid, 100 psi (7bar) pressure drop, and 40°F (5°C) evaporator temperature.

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## Notes

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## Electronic Product Range

Parker Sporlan's range of electronic products are ideal for heat pumps, chillers, cold rooms and industrial/commercial HVAC-R applications.



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## Electronic Product Range

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## PSK - Thermostatic Refrigeration Controllers

Static controllers de-frost achieved by turning the compressor off,  
Ventilated controllers de-frost achieved by using electric heater or hot gas, Voltage Range, 230 Volt AC, 115 Volt AC, 24 Volt DC, 12 Volt DC.



The **PSK family** of thermostatic refrigeration controllers designed to accurately control the temperature of supermarket display case and cabinets, by controlling the time that the refrigeration compressors is running, to provide optimum product temperature, to ensure the products are always chilled to the correct temperature, for product safety, and to avoid product wastage.

The **PSK** controls the compressors on - off time and can also control the de-frost cycle. Alarms functions built into the controller inform the user if there are problems. Some controllers are design to store alarm messages to fulfil HACCP requirements.

Remote control of the **PSK** and data collection, for remote monitoring, for service and maintenance purposes, is possible by using Modbus RS485 connection.

A wide range of supply voltages are available, 230 VAC, 115 VAC, 24-12 VAC/DC.

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## Food Retail

### PSK Thermostatic Refrigeration Controllers

for Static and Ventilated units

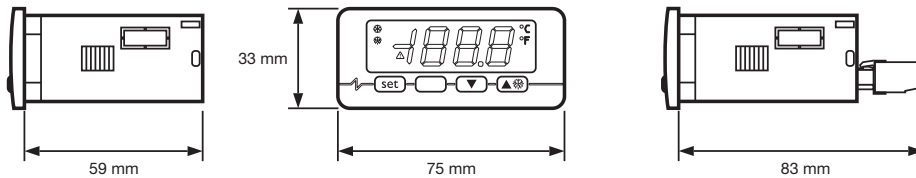
**PSK Thermostatic Refrigeration Controllers** regulate the temperature in food, beverage, and cold room storage applications. Static units, manage defrost by turning off the compressor. Ventilated units, manage defrost by electronic heater, hot gas and evaporator fan control.

#### Benefits:

- Better product quality by improving case temperature management
- Reduced product wastage by maintaining a stable temperature/humidity ratio
- Lower energy consumption by improving defrost management
- HACCP alarm gives customers food safety traceability\* (\* model dependent)

3

### Dimensions Data



- Storage -30 to +85°C
- Operating temperature range (ambient) 0 to +55°C
- Humidity range (ambient) 10 to 90%r.H non condensing
- Dimension 83 mm is the total length with optional female connectors fitted

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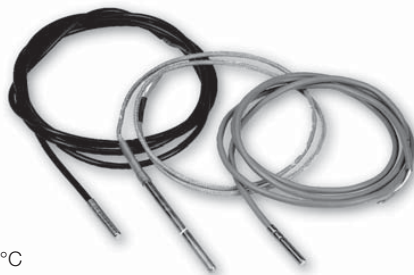
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## Options PSK

### EVTPN615F200

Temperature Probe NTC 103AT-2 sensor  
(10 kOhm @25°C) 1.5 m Long,  
6 x 15 mm bulb overmoulded,  
temperature range -40 /+110°C



### EVTPN630F200

Temperature Probe NTC 103AT-2 sensor  
(10 kOhm @25°C) 3.0 m Long  
6 x 15 mm bulb overmoulded temperature range -40/+110°C

### PSIF20TSX

TTL / RS485 isolated driver



### PSKEY

Programming key, for fast & easy down load  
of parameter values

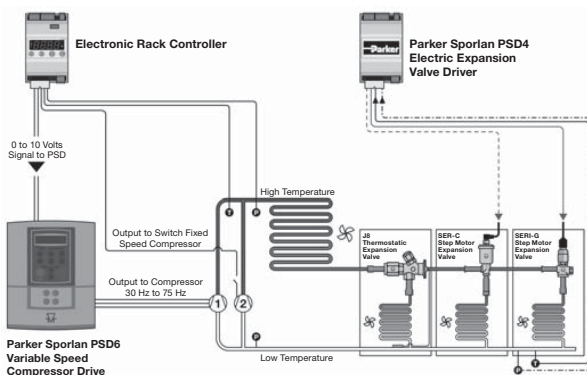


### PSPS

Power supply for PSKEY Programming key  
230-115 VAC - 9 VDC



## Drive Systems for Refrigeration Compressors and Condenser Fans



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## Order Selection Guide PSK

Type Static Controllers	Va.c.	Hz	A/I	D/I	D/O	CR	DF	EV	CO	AB	TM	RT	HA
PSK201N7	230	50/60	1	-	1	16 A	-	-	-	-	-	-	-
PSK221N7	230	50/60	2*	1*	1	16 A	-	-	-	-	-	-	-
PSK231N7VXBS	230	50/60	2*	1*	1	30 A	-	-	-	✓	✓	-	-

Type Ventilated Controllers	Va.c.	Hz	A/I	D/I	D/O	CR	DF	EV	CO	AB	TM	RT	HA
PSK203N7	230	50/60	2	-	3	16 A	8 A	8 A	-	-	-	-	-
PSK223N7	230	50/60	2	1	3	8 A	8 A	5 A	-	-	-	-	-
PSK233N7VXBS	230	50/60	2	1	3	30 A	8 A	5 A	-	✓	✓	-	-
PSK204N9	115-230	50/60	3*	2*	4	16 A	8 A	8 A	✓	-	-	-	-
PSK214N9VXBS	115-230	50/60	3*	2*	4	16 A	8 A	8 A	✓	✓	✓	✓	✓

Type Static Controllers	Va.c.	Hz	A/I	D/I	D/O	CR	DF	EV	CO	AB	TM	RT	HA
PSK201N5	115	50/60	1	-	1	16 A	-	-	-	-	-	-	-
PSK221N5	115	50/60	2*	1*	1	16 A	-	-	-	-	-	-	-
PSK231N5VXBS	115	50/60	2*	1*	1	30 A	-	-	-	✓	✓	-	-

Type Ventilated Controllers	Va.c.	Hz	A/I	D/I	D/O	CR	DF	EV	CO	AB	TM	RT	HA
PSK203N5	115	50/60	2	-	3	16 A	8 A	8 A	-	-	-	-	-
PSK223N5	115	50/60	2	1	3	8 A	8 A	5 A	-	-	-	-	-
PSK233N5VXBS	115	50/60	2	1	3	30 A	8 A	5 A	-	✓	✓	-	-

Type Static Controllers	Va.c.	Hz	A/I	D/I	D/O	CR	DF	EV	CO	AB	TM	RT	HA
PSK221N3	24-12	50/60	2*	1*	1	16 A	-	-	-	-	-	-	-
PSK231N3VXBS	24-12	50/60	2*	1*	1	30 A	-	-	-	✓	✓	-	-

Type Ventilated Controllers	Va.c.	Hz	A/I	D/I	D/O	CR	DF	EV	CO	AB	TM	RT	HA
PSK213N3	24-12	50/60	2	1	3	16 A	8 A	8 A	-	-	-	-	-
PSK213N3VXBS	24-12	50/60	2	1	3	16 A	8 A	8 A	-	✓	✓	-	-

### Key

A/I = Analogue inputs  
D/I = Digital inputs  
D/O = Digital outputs  
CR = Compressor Relay A

DF = Defrost Relay A  
EV = Evaporator Fan Relay A  
CO = Configurable I/O  
AB = Alarm Buzzer

TM = TTL Modbus port  
RT = Real Time Clock  
HA = HACCP functions  
\* Configurable

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# PSQ

## Cold Room Controller

Ventilated controller de-frost achieved by using electrical heater or hot gas, wall mounted Enclosure to IP65.



The **Parker PSQX214000** is a dedicated **Cold Room Controller**.

The **PSQ** power supply is 230 VAC single phase. Its IP65 wall mounting enclosure allows the customer to install the controller on the outside wall of a cold room. On the front of the electrical enclosure there are 6 functions keys.

These give the user easy access to all the controller functions.

The **PSQ** is full equipped to meet the demands of today's cold storage requirements. Its built-in Real Time Clock (RTC) allows the user to store and track critical HACCP alarms, and set up Energy Saving Cycles, to reduce and optimise the energy consumption of the cold room. With 4 relay outputs, the user can select which functions they would like to control, for example, compressor, defrost (both electrical & hot gas), evaporator fan, and lights. The built-in alarm buzzer also highlights system problems.

Remote communication is possible by using the PSQ integrated Modbus TTL port.

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# Thermostatic Refrigeration Controllers for Cold Room applications

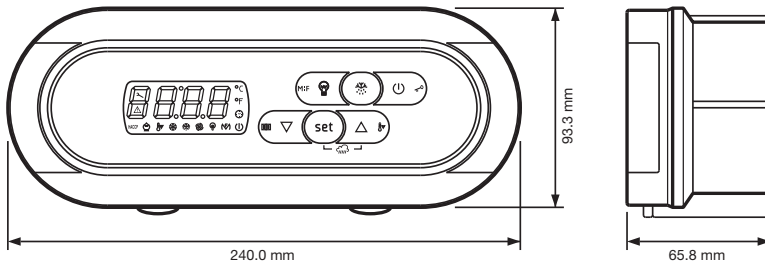
**Thermostatic Refrigeration Controllers** regulate the temperature in cold room storage applications. PSQX214000 is enclosed to IP65 making it water proof and ideal for mounting in or close to the cold room.

### Benefits:

- Improved product quality by improved temperature and humidity control
- Real time clock allows customers to set up energy saving periods
- HACCP food safety alarms stored and time stamped for traceability
- Remote date logging and alarm monitoring via Modbus TTL serial port
- IP65 water proof enclosure, allows easy mounting on the outside of the cold room

3

## Dimensions Data



- Storage -30 to +85°C
- Operating temperature range (ambient) 0 to +55°C
- Humidity range (ambient) 10 to 90%.H non condensing
- Wall mounting, enclosed to IP65

## Order Selection Guide PSQ

Type Cold Room Controllers	Va.c.	Hz	A/I	D/I	D/O	CR	DF	EV	CO	AB	TM	RT	HA
PSQX214000	230-115	50/60	3	2*	4*	30 A	8 A	8 A	✓	✓	✓	✓	✓

CO = Configurable I/O  
AB = Alarm Buzzer

TM = TTL Modbus port  
RT = Real Time Clock

HA = HACCP functions

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# PSD6

## AC Variable Speed Drive for Refrigeration Compressors & Condensing Fans

Power Range

0.75 kW to 110 kW

Compressor currents

2.5 to 205 A

Power supply 230 & 460 VAC

three phase



**PSD6 AC Variable Speed Drive** has been designed to control the speed of refrigeration compressors. To improve system performance by matching compressor speed to cooling demand. The **PSD** has two dedicated analog inputs, 0 to 10 Volt and 4-20 mA, which can be used to control the speed of the compressor. The speed demand signals are provided by an external controller.

The **PSD6** has a dedicated compressors motor fluxing software, providing 20% more starting torque than other drive suppliers, which ensures the compressor always start first time, even under the worst operating conditions, and weak power supplies.

With a limited number of control inputs & outputs, plus easy to use LCD programming keypad, with factory set compressor parameters, such as minimum & maximum speed, making the drive easy to install and commission.

With a wide power range, 0.75 kW to 110 kW, the **PSD6** can cover the majority of refrigeration applications. Larger drives are available, for application such as chillers, where screw compressors are commonly used.

Advise you can trust. With over 20 years experience in controlling the speed of refrigeration compressors, we have built up a unique compressor cross reference list, with technical details on more than 1.500 compressor models, enabling us to select the right **PSD6** drive for your compressor and condensing fan.

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# PSD6 A.C. Variable Speed Drives for Control of Refrigeration Compressors and Condensing Fans

**PSD6** controls the speed of refrigeration compressors and condensing fans, to match the system capacity to the cooling demand. PSD6 is designed to work as a slave to an external controller.

## Benefits:

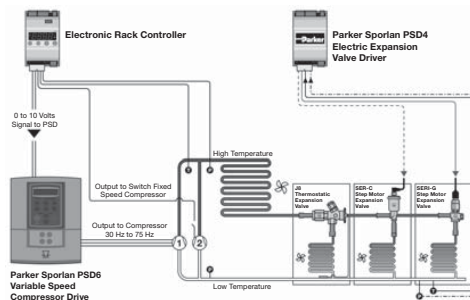
- **Dedicated "compressor software" guarantees compressors start, lowering the risk of compressor failure**
- **Dedicated "compressor software" improves the system performance by expanding the cooling capacity of the compressor**
- **Matched PSD6 and controller lowers technical risks and reduces design time**
- **Improved Product quality better suction temperature control**
- **Reduced product wastage - improved control of suction line temperature**
- **Up to 40% energy savings**
- **Lower maintenance costs because PSD6 reduces the start up stress on the compressor**
- **Easy to install, only 7 parameters to set (Reduces commissioning costs)**

- Power supply 380 to 460 VAC +/-10%
- Power range 0.75 kW to 110 kW
- Enclosed to IP20 or IP40
- Ambient temperature 50°C with de-rate
- Low Voltage directive EN 50178
- Machinery Directive EN 60204-1
- EMC EN50081-1/2 & EN 500821/2
- Serial port communications Modbus, LonWorks LCD Multilingual programming keypad



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## Drive Systems for Refrigeration Compressors and Condenser Fans



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## Order Selection Guide-PSD6

PSD6K (380 to 460 Volt +/- 10% 3 AC)	kW	Amps - I max	Frame	W x H x D mm	kg
PSD6K-2.5T460	0.75	2.5	B	177 x 233 x 181	4.5
PSD6K-4.5T460	1.5	4.5	B	177 x 233 x 181	4.5
PSD6K-5.5T460	2.2	5.5	B	177 x 233 x 181	4.5
PSD6K-9.5T460	4	9.5	B	177 x 233 x 181	4.5
PSD6K-12T460	5.5	12	B	177 x 233 x 181	4.5
PSD6K-14T460	6	14	B	177 x 233 x 181	4.5
PSD6K-23T460	11	23	C	201 x 348 x 207	12.5
PSD6K-30T460	15	30	C	201 x 348 x 208	12.5
PSD6K-37T460	18.5	37	C	201 x 348 x 208	12.5
PSD6K-45T460	22	45	D	252 x 453 x 245	23
PSD6K-59T460	30	59	D	252 x 453 x 245	23
PSD6K-73T460	37	73	D	252 x 453 x 245	23
PSD6K-87T460	45	87	E	257 x 669 x 312	40
PSD6K-105T460	55	105	E	257 x 669 x 312	40
PSD6K-145T460	75	145	F	257 x 720 x 355	60
PSD6K-165T460	90	165	F	257 x 720 x 355	60
PSD6K-205T460	110	205	F	257 x 720 x 355	60

PSD6K (220 to 240 Volt +/- 10% 3 AC)	kW	Amps - I max	Frame	WxHxD mm	kg
PSD6K 16.5T230	4	16.5	B	177x 233 x181	4.5
PSD6K 42T230	11	42	C	201x 348 x208	12.5
PSD6K 54T230	15	54	D	253x 453 x 245	23
PSD6K 68T230	18.5	68	D	253x 453 x 245	23
PSD6K 104T230	30	104	E	257x 669 x 312	40
PSD6K 130T230	37	130	F	257x 720 x 355	60
PSD6K 192T230	55	192	F	257x 720 x 355	60

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## Order Selection Guide-PSD6 Options

PSD6 - Class B back mounting RFI Filter
C0467842U020 Frame B
C0467842U044 Frame C
C0467842U084 Frame D
C0467842U105 Frame E
C0467842U215 Frame F

PSD6 - IP40 Gland Box Cover
BA467840U020 Frame B
BA467840U044 Frame C
BA467840U084 Frame D
BA467840U105 Frame E

PSD6 - IP40 Top Cover
LA467452 Frame B
LA465034U002 Frame C
LA465048U002 Frame D
LA465058U002 Frame E

PSD6 - Remote Mounting Keypad Kit 3m
6052-11

PSD6 - Modbus Communication Cards
6053-EI00-04 Frame B
6055-EI00-04 Frames C to F

PSD6 - Keypad
6901-00-G

PSD6 - Duct Kit
LA 466717U003 Frame F only

PSD6 - Blanking Cover
BD467732U002

3

For more information on PSD6K please visit [www.parker.com/race](http://www.parker.com/race)

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## Thermostatic Expansion Valves

The Thermostatic Expansion Valves control the flow of liquid refrigerant. The ideal expansion device for most A/C & refrigeration applications.



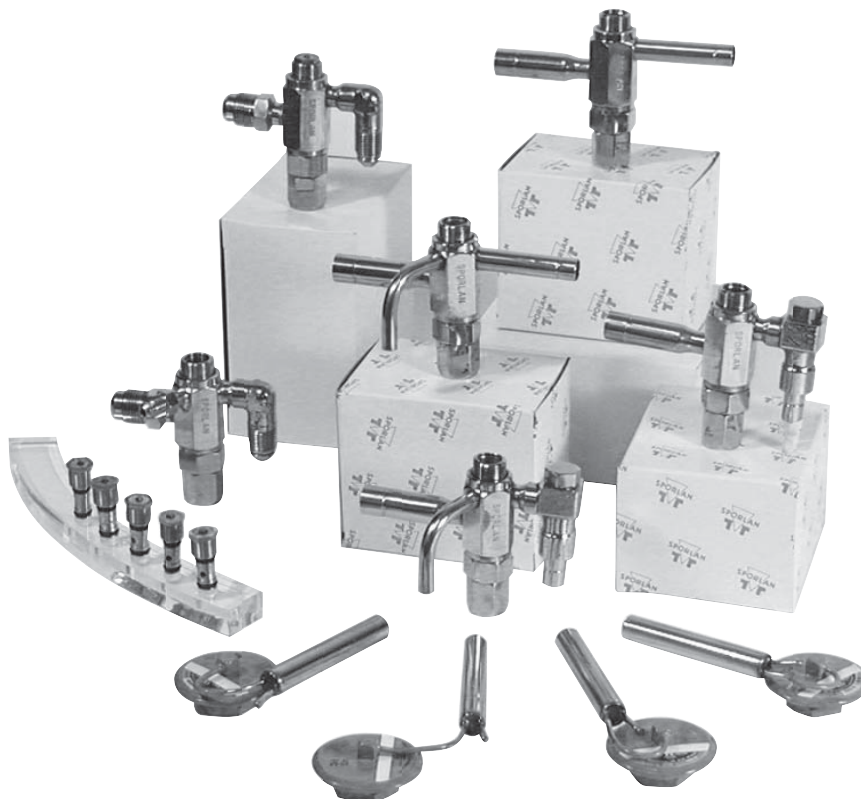
ENGINEERING YOUR SUCCESS.

## Description

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 vapour 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 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 vaporised in the evaporator makes the **TEV** the ideal expansion device for most air conditioning and refrigeration applications.



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## Thermostatic Expansion Valves

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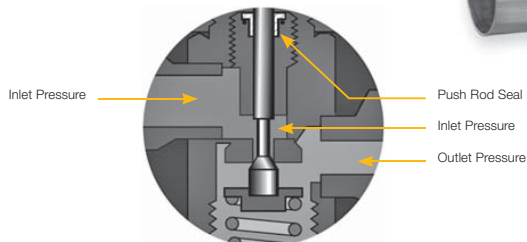
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## Type R, EBS & O

Parker Sporlan Thermostatic Expansion Valves

### Balanced Port Design



## 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.

O	Z	E	35	GA	7/8" ODF Solder	x	1-1/8" ODF Solder	x	1/4" ODF Solder	x	5'
Body Type	Parker Sporlan Code Refrigerant Element Label Color Code V = R-22 Green J = R-134a Blue S = R-404A Orange N = R-407C Lt. Brown F = R-409A Yellow Z = R-410A Rose P = R-507 Teal	"E" specifies external equalizer. Omission of letter "E" indicates valve with internal equalizer.	Nominal Capacity in Tons	Thermostatic Charge	Inlet Connection  Size and Style		Outlet Connection  Size and Style		External Equalizer Connection  Size and Style		Capillary Tubing Length  Inches or Feet

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

Parker Sporlan Selective Charges engineered for peak performance for each specific application

### Recommended Thermostatic Charges\*

Application	Refrigerant						Charges
	22, 422D	134a	404A	407C	R507	410A	
Air Conditioning	-	JCP60	-	-	-	-	FCP60
	VCP100	-	-	NCP100	-	-	VCP100
	VGA	-	-	NGA	-	-	VGA
	-	-	SCP115	-	PCP115	-	SCP115
	-	-	-	-	-	ZCP180	ZCP180
	-	-	-	-	-	ZGA	ZGA
Commercial Refrigeration 10°C to -25°C	-	JC	-	-	-	-	JC
	VC	-	-	NC	-	-	VC
	-	-	-	-	-	-	NC
	-	-	SC	-	PC	-	SC
Low Temperature Refrigeration -25°C to -40°C	-	-	SZ	-	PZ	-	SZ
	-	-	SZP	-	PZP	-	SZP

#### \* APPLICATION FACTORS:

- The Type ZP,CP charges have essentially the same characteristics as the Type Z,C charge with one exception: they produce a pressure limit Maximum Operating Pressure (MOP). ZP,CP charges are not intended as replacements for Z,C 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.

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## Type R

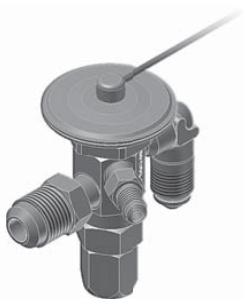
The Parker Sporlan **Type R** valve features balanced port design, an external adjustment assembly and the replaceable element assembly. The **Type R** includes three conventional body styles, the ER, SR and R, with fractional capacity versions. The ER with extended copper connections provides exceptional control in both flow directions making the ER an excellent choice for Bi-flow heat pump applications.

The ER also features the 60 x 50 mesh stainless steel wire cloth inlet strainer as a standard feature; the 100 mesh inlet strainer is an optional feature available for 5/8" ODF and larger fitting combinations.

The Parker Sporlan **Type R**, with SAE flare connections, and the Type SR with the removable strainer assembly share the same balanced port construction as the ER. The R is complete with the 100 mesh inlet strainer as an integral part of the fitting while the SR has a 100 mesh removable strainer that can be cleaned or replaced while the valve remains soldered to the system tubing.

These valves are ideally suited for small to large capacity refrigeration applications that could operate over widely varying operating conditions and are now available in fractional capacities for refrigerants including R-407C, R-134a, R-404A, R-507 and R-410A.

### Flare Connections



**RE (SAE)**  
Externally Equalized

### Extended Solder Connections



**ERE (ODF)**  
Externally Equalized

### Extended Solder Connections with Forged Inlet and replaceable Strainer



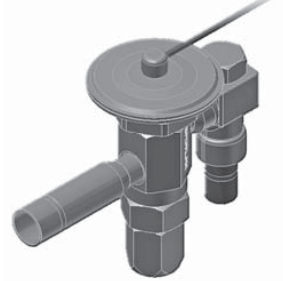
**SRE (ODF)**  
Externally Equalized



**R (SAE)**  
Internally Equalized



**ER (ODF)**  
Internally Equalized



**SR (ODF)**  
Internally Equalized

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## Specifications & Materials/Details of Construction

<b>Body</b>	Machined Brass bar	
<b>Seat</b>	Brass Port Machined in Body	
<b>Pin</b>	Stainless Steel	
<b>Pushrod</b>	Stainless Steel	
<b>Element to Body Joint Type</b>	Knife Edge to Metal	
<b>Connections</b>	SAE Flare, ODF Copper Fittings Silver Soldered to Body	
<b>Inlet Strainer</b>	Insert Strainer, Removable Strainer Screen	
<b>Operating Temp. Range</b>	-40°C +10°C (-40°F to 50°F)	
<b>MRP</b>	48.3 bar (700 psig) for R-410A only / 31.0 bar (450 psig)	
<b>Maximum Temperature</b>	121°C (250°F) Limited Exposure Time	
<b>Max Ambient Temp.</b>	60°C (140°F)	
<b>Max Bulb Temp.</b>	ZGA, ZCP180 (R410A) Element Charge	71.1°C (160°F)
	GA, CP, ZP all Refrigerants excl R410A	121°C (250°F)
	JC (R134a) Element Charge	87.8°C (190°F)
	VC (R407C) Element Charge	71.1°C (160°F)
	SC (R404A) Element Charge	65.6°C (150°F)
	SZ (R404A) Element Charge	76.7°C (170°F)
<b>Max External Leakage</b>	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
<b>UL</b>	SA5460	
<b>Compatibility</b>	All HFC, HCFC, Refrigerants and blends	

### Certification:

The Type R Thermostatic Expansion Valves comply with the Directive(s) 97-23-EC.

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## Benefits

- Selective thermostatic charges provide optimum performance for all common applications - air conditioning and heat pump, medium and low temp. refrigeration
- Stainless steel diaphragm and welded element construction
- Large flat diaphragm permits precise valve control
- Balanced Port Design provides excellent control on applications with widely varying operation conditions
- Externally adjustable
- Excellent Bi-Flow Control for Heat Pump Applications (only for valves with external equalizer)
- The copper bulb design provides an excellent heat transfer
- Replaceable Thermostatic Elements

## Options

- ZCP180,ZGA charge available for R410A systems
- SAE (with 100 mesh strainer) or ODF (with 60 x 50 mesh stainless steel wire cloth strainer) connections
- ODF version also available with 100 mesh removable strainer
- External or internal equalizer
- Pressure limiting charge (CP) and anti hunting charge (GA) available
- Available with internal check valve

4

Nominal Capacity Tons of Refrigeration				Connections - Inches*		Connections - mm*	
R-410A	R-407C	R-134a	R-404A, R507	Inlet	Outlet	Inlet	Outlet
1/3	1/3	1/6	1/6	1/4, 3/8	3/8, 1/2	6.4, 9.5	9.5, 12.7
1/2	1/2	1/4	1/4	1/4, 3/8	3/8, 1/2	6.4, 9.5	9.5, 12.7
1	1	1/2	1/2	1/4, 3/8	3/8, 1/2	6.4, 9.5	9.5, 12.7
1-1/2	1-1/2	1	1	3/8	1/2	9.5	12.7
2	2	1-1/2	1-1/2	3/8	1/2	9.5	12.7
3	3	2	2	3/8, 1/2	1/2, 5/8	9.5, 12.7	12.7, 15.9
4	4	2-1/2	3	3/8, 1/2	1/2, 5/8, 7/8	9.5, 12.7	12.7, 15.9, 22.2
5	5	3	3-1/2	3/8, 1/2	1/2, 5/8, 7/8	9.5, 12.7	12.7, 15.9, 22.2
6	6	4	4	3/8, 1/2, 5/8	1/2, 5/8, 7/8	9.5, 12.7, 15.9	12.7, 15.9, 22.2
8	8	5	6	1/2, 5/8	7/8, 1-1/8	12.7, 15.9	22.2, 28.6
12-1/2	10	-	-	5/8	7/8, 1-1/8	15.9	22.2, 28.6
15	12	-	-	5/8	7/8, 1-1/8	15.9	22.2, 28.6

\* Some fitting combinations may not be available.

TEV capacity ratings for R-134a, R-401A, R-404A, R-407C, R-408A, 409A, R-410A, and R-422D are based on vapor free 38°C liquid refrigerant entering the expansion valve, a maximum opening superheat of 4K, 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 10°C, 5°C, -5°C, -15°C, -20°C, -30°C, -40°C in the capacity tables are in accordance with ANSI/ARI Standard Number 750. TEVs are tested in accordance with ANSI/ASHRAE 17. For TEV capacity ratings at operating conditions not shown in the following tables, consult your nearest Parker Sporlan Wholesaler

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## Selection Tables

Air Conditioning, Heat Pump and Commercial Refrigeration Applications													
Valve Size	Nominal Capacity	Refrigerant											
		R422D						407C					
		Recommended Thermostatic Charge											
		VC, VCP100, VGA				VZ, VZP40**				VC, VCP100*, VGA			
		Evaporator Temperature °C											
kW	10°	5°	-5°	-15°	-20°	-30°	-40°	10°	5°	-5°	-15°	-20°	
1/3	1.2	0.74	0.72	0.79	0.69	0.66	0.45	0.34	1.04	1.02	1.14	1.01	0.97
1/2	1.75	1.27	1.24	1.36	1.18	1.12	0.78	0.58	1.78	1.75	1.95	1.73	1.66
1	3.5	2.12	2.07	2.26	2.0	1.97	1.44	1.07	2.97	2.92	3.25	2.93	2.91
1-1/2	5.3	3.71	3.62	3.96	3.51	3.22	2.04	1.52	5.21	5.12	5.69	5.13	4.75
2	7	4.87	4.75	5.2	4.61	4.23	2.67	2.0	6.84	6.72	7.48	6.74	6.24
3	11	6.78	6.61	7.24	6.42	5.94	3.84	2.87	9.52	9.35	10.4	9.38	8.77
4	14	8.89	8.68	9.5	8.42	7.78	5.01	3.74	12.5	12.3	13.7	12.3	11.5
5	18	10.6	10.3	11.3	10	9.15	5.73	4.28	14.9	14.6	16.3	14.7	13.5
6	21	12.7	12.4	13.6	11.2	9.98	2.92	4.38	17.8	17.5	19.5	16.3	14.7
8	28	16.9	16.5	18.1	16.0	13.8	6.86	4.63	23.8	23.4	26.0	23.4	20.3
10	35	22.1	21.5	23.6	20.9	13.3	-	-	31.0	30.5	33.9	30.6	19.6
12	42	25.6	25.0	27.4	24.3	15.4	-	-	36.0	35.4	39.3	35.5	22.8

\* MOP point CP100 ≈ 14°C, \*\*MOP point ZP40 ≈ -12°C

Liquid Temperature Entering TEV °C							
Refrigerant	-10°	0°	10°	20°	30°	50°	60°
	Correction Factor, CF						
407C	1.73	1.59	1.45	1.3	1.15	0.84	0.67
422D	1.86	1.68	1.5	1.33	1.14	0.77	0.57

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -40°C to 10°C since the variation in the actual factors across this range is insignificant.

R22, 407C, 422D Evaporator Temperature °C	Pressure Drop Across TEV bar							
	2	4	6	8	10	12	14	16
	Correction Factor, CF							
5° & 10°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63
-5° & -15°	0.50	0.71	0.87	1.00	1.12	1.22	1.32	1.41
-20° & -30°	0.45	0.63	0.77	0.89	1.00	1.11	1.18	1.26
-40°	0.41	0.58	0.71	0.82	0.91	1.00	1.08	1.15

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop  
 Actual capacity of a nominal 5.3 kW R-407C Type R valve at -5°C evaporator, 10 bar pressure drop across the TEV and a 30°C liquid temperature entering the TEV = 3.96 (from rating chart) x 1.15 (CF liquid temperature) x 1.12 (CF pressure drop) = 5.1 kW.

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## Selection Tables

Air Conditioning, Heat Pump and Commercial Refrigeration Applications					
Valve Size	Nominal Capacity	Refrigerant R410A			
		Recommended Thermostatic Charge			
		ZCP180*, ZGA			
		Evaporator Temperature °C			
	kW	10°	5°	-5°	-15°
1/3	1.2	1.44	1.43	1.58	1.42
1/2	1.8	2.47	2.45	2.7	2.43
1	3.5	4.12	4.08	4.5	4.12
1-1/2	5.3	7.21	7.14	7.88	7.21
2	7	9.47	9.38	10.4	9.48
3	11	13.2	13.1	14.4	13.2
4	14	17.3	17.1	18.9	17.3
5	18	20.6	20.4	22.5	20.6
6	21	24.7	24.5	27.0	23.0
8	28	33.0	32.6	36.0	33.0
12-1/2	44	43.0	42.5	46.9	43.0
15	53	49.8	49.4	54.4	49.9

\* MOP point CP180 ≈ 15°C

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Refrigerant	Liquid Temperature Entering TEV °C				
	20°	30°	40°	50°	60°
	Correction Factor, CF				
410A	1.30	1.15	1.00	0.84	0.65

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -15°C to 10°C since the variation in the actual factors across this range is insignificant.

R410A Evaporator Temperature °C	Pressure Drop Across TEV bar				
	8	11	14	17	20
	Correction Factor, CF				
5° & 10°	0.85	1.00	1.13	1.24	1.35
-5° & -15°	0.76	0.89	1.00	1.10	1.20

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 14 kW R-410A Type R valve at -15°C evaporator, 17 bar pressure drop across the TEV and a 30°C liquid temperature entering the TEV = 17.3 (from rating chart) x 1.15 (CF liquid temperature) x 1.10 (CF pressure drop) = 21.9 kW.

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## Selection Tables

Air Conditioning, Heat Pump and Commercial Refrigeration Applications													
Valve Size	Capacity	Refrigerant											
		404A, 507**						408A					
		Recommended Thermostatic Charge											
		SCP115*, SC			SZ, SZP*			SCP115, SC			SZ, SZP		
		Evaporator Temperature °C											
kW	5°	-5°	-15°	-20°	-30°	-40°	5°	-5°	-15°	-20°	-30°	-40°	
1/6	0.6	0.71	0.78	0.74	0.8	0.66	0.57	0.91	1.02	0.99	1.08	0.91	0.8
1/4	0.9	1.21	1.34	1.27	1.35	1.07	0.85	1.57	1.75	1.69	1.81	1.47	1.18
1/2	1.8	1.88	2.07	1.85	1.88	1.45	1.09	2.43	2.71	2.46	2.52	1.99	1.53
1	3.5	3.57	3.94	3.51	3.23	2.06	1.55	4.61	5.15	4.67	4.33	2.82	2.17
1-1/2	5.3	4.7	5.18	4.61	4.23	2.68	2.01	6.06	6.77	6.14	5.68	3.67	2.82
2	7.0	6.52	7.18	6.4	5.94	3.87	2.91	8.4	9.39	8.51	7.98	5.3	4.08
3	11.0	8.58	9.45	8.42	7.81	5.06	3.8	11.1	12.4	11.2	10.5	6.93	5.33
3-1/2	12.0	10.2	11.3	10	9.18	5.78	4.35	13.2	14.7	13.3	12.3	7.92	6.09
4	14.0	12.3	13.5	11.2	10.1	6.06	4.51	15.8	17.7	14.9	13.5	8.3	6.32
6	21.1	16.3	18.0	16.0	13.8	6.92	5.15	21.1	23.5	21.3	18.5	9.48	7.22

\* MOP point CP115 = 10°C, MOP point ZP = -17°C

\*\* At low temp. Applications capacities are almost the same when using the "S" charge for R507, for medium temp. Applications the Superheat may need adjusting.

Liquid Temperature Entering TEV °C									
Refrigerant	-10°	0°	10°	20°	30°	40°	50°	60°	
	Correction Factor, CF								
404A	1.89	1.72	1.56	1.37	1.19	1.0	0.79	0.56	
408A	1.58	1.46	1.34	1.22	1.1	0.97	0.85	0.71	

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -40°C to 5°C since the variation in the actual factors across this range is insignificant.

Evaporator Temperature °C	Pressure Drop Across TEV bar							
	2	4	6	8	10	12	14	16
	Correction Factor, CF							
5°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63
-5° & -15°	0.50	0.71	0.87	1.00	1.12	1.22	1.32	1.41
-20° & -30°	0.45	0.63	0.77	0.89	1.00	1.10	1.18	1.26
-40°	0.41	0.58	0.71	0.82	0.91	1.00	1.08	1.15

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 5.3 kW R-404A Type R valve at -5°C evaporator, 10 bar pressure drop across the TEV, and a 30°C liquid temperature entering the TEV = 5.18 (from rating chart) x 1.19 (CF liquid temperature) x 1.12 (CF pressure drop) = 6.9 kW.

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## Selection Tables

Valve Size	Nominal Capacity	Refrigerant											
		134a				409A				401A			
		Recommended Thermostatic Charge											
		JC, JCP60*				JC, JCP60				JC, JCP60			
		Evaporator Temperature °C											
kW	10°	5°	-5°	-15°	10°	5°	-5°	-15°	10°	5°	-5°	-15°	
1/6	0.6	0.86	0.85	1.0	0.95	0.87	0.85	1.04	1.01	0.93	0.91	1.08	1.04
1/4	0.9	1.48	1.45	1.7	1.63	1.49	1.46	1.8	1.73	1.59	1.56	1.84	1.78
1/2	1.8	2.49	2.44	2.86	2.57	2.5	2.45	2.9	2.62	2.67	2.62	3.1	2.81
1	3.5	4.35	4.27	5.01	4.5	4.37	4.29	5.07	4.58	4.66	4.59	5.42	2.83
1-1/2	5.3	5.72	5.61	6.58	5.91	5.74	5.64	6.66	6.02	6.13	6.03	7.12	6.47
2	7	7.96	7.8	9.16	8.23	7.99	7.85	9.27	8.37	8.53	8.39	9.91	8.99
2-1/2	8.8	10.4	10.2	12.0	10.8	10.5	10.3	12.2	11.0	11.2	11.0	13.1	11.8
3	11	12.4	12.2	14.3	12.9	12.5	12.3	14.5	13.1	13.3	13.1	15.5	14.1
4	14	14.9	14.6	17.2	14.3	15.0	14.7	17.4	14.6	16.0	15.7	18.6	15.7
5	17.6	19.9	19.5	23.0	20.7	20.7	20.4	24.2	21.9	21.2	20.9	24.8	22.5

\* MOP point CP60 ≈ 12°C

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Refrigerant	Liquid Temperature Entering TEV °C							
	-10°	0°	10°	20°	30°	40°	50°	60°
	Correction Factor, CF							
134a	1.64	1.52	1.39	1.26	1.13	1.00	0.87	0.73
409A	1.51	1.41	1.31	1.21	1.11	1.00	0.89	0.78
401A	1.52	1.42	1.31	1.2	1.09	0.98	0.86	0.74

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -15°C to 10°C since the variation in the actual factors across this range is insignificant.

Evaporator Temperature °C	Pressure Drop Across TEV bar							
	2	4	6	8	10	12	14	16
	Correction Factor, CF							
5° & 10°	0.71	1.00	1.22	1.41	1.58	1.73	1.87	2.00
-5° & -15°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 5.3 kW R-134a Type R valve at -5°C evaporator, 8 bar pressure drop across the TEV, and a 30°C liquid temperature entering the TEV = 6.58 (from rating chart) x 1.13 (CF liquid temperature) x 1.15 (CF pressure drop) = 8.55 kW.

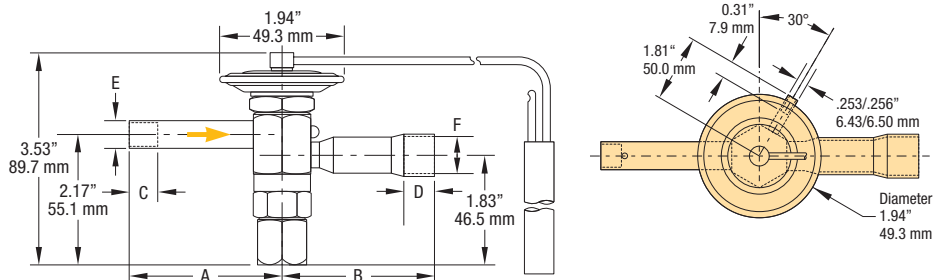
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## Valve Dimensions

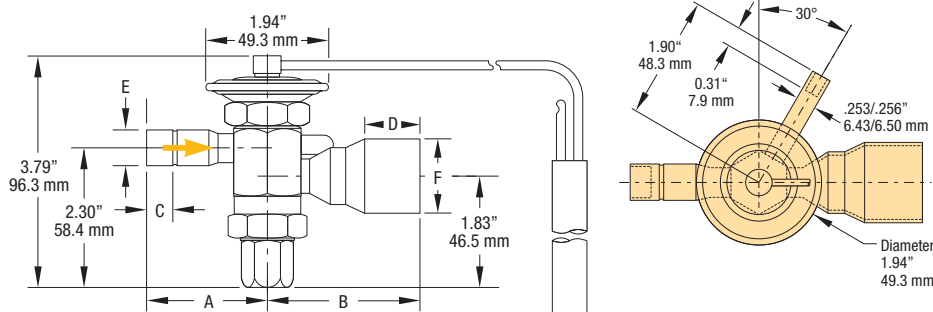
### Type ERE - Small body



### Dimensions - Connections

Fitting Size Inches		Inches						mm					
Inlet	Outlet	A	B	C	D	E	F	A	B	C	D	E	F
1/4	3/8	1.69	2.42	0.31	0.31	.253/.256	.377/.381	42.9	61.5	7.87	7.87	6.43/6.50	9.58/9.68
3/8	1/2	2.42	2.51	0.31	0.40	.377/.381	.502/.506	61.5	63.8	7.90	10.2	9.58/9.68	12.8/12.9
1/2	5/8	2.35	2.51	0.40	0.50	.502/.506	.627/.632	59.7	63.8	10.2	12.7	12.8/12.9	15.9/16.1
	7/8		2.41										
5/8	1-1/8	2.35	2.41	0.50	0.91	.627/.632	1.128/1.135	59.7	61.2	12.7	23.1	15.9/16.1	28.7

### Type ERE - Large body



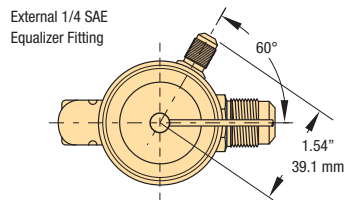
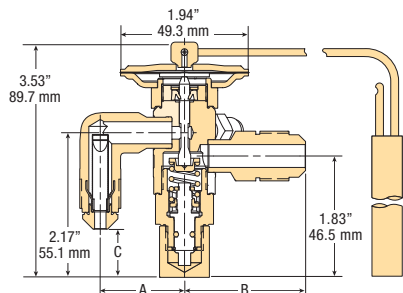
### Dimensions Connections

Fitting Size Inches		Inches						mm					
Inlet	Outlet	A	B	C	D	E	F	A	B	C	D	E	F
5/8	7/8	2.48	2.51	0.50	0.78	.627/.632	.877/.882	63.0	63.8	12.7	19.8	15.9/16.1	22.3/22.4
	1-1/8				0.91		.1.128/1.135						23.1

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# Valve Dimensions

## Type RE



### Dimensions Connections

Fitting Size Inches		Inches			mm		
Inlet	Outlet	A	B	C	A	B	C
1/4	3/8	1.09	1.63	1.13	27.7	41.4	28.7
3/8	1/2	1.27	1.82	0.71	38.1	46.2	18.0

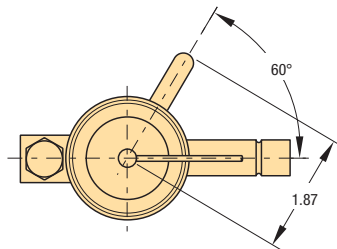
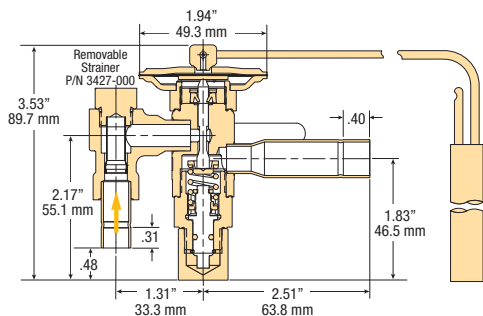
### Bulb Sizes\*

Standard Charges	Dimensions	
	Inches	mm
C, Z, MOP Type Charges	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

\* Bulb size dimensions apply to all valve types and refrigerants.

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## Type SRE



SRE dimension based on 3/8 x 1/2 connections

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## Order Selection Guide R Type

### R407C, R22, R422D

Valve Type	Valve Size	Valve Description	With External Equalizer	Capillary Tube Length in mm	Thermostatic Charge			
					C	CP100	Z	GA
					R Type with 22 (V) Refrigerant			
					Part Number	Part Number	Part Number	Part Number
R	RV-1/3	* 1/4 x 1/2 SAE - 30"	NO	760	169313	Special order valve	Special order valve	Special order valve
	RV-1/2	* 1/4 x 1/2 SAE - 30"	NO	760	169312	Special order valve	Special order valve	Special order valve
	RV-1/2	* 3/8 x 1/2 SAE - 30"	NO	760	169345	Special order valve	Special order valve	Special order valve
	RV-1	* 1/4 x 1/2 SAE - 5"	NO	1500	169311	Special order valve	Special order valve	Special order valve
	RV-1	* 3/8 x 1/2 SAE - 5"	NO	1500	169338	Special order valve	Special order valve	Special order valve
	RV-1-1/2	* 3/8 x 1/2 SAE - 5"	NO	1500	169342	Special order valve	Special order valve	Special order valve
	RV-2	* 3/8 x 1/2 SAE - 5"	NO	1500	169340	Special order valve	Special order valve	Special order valve
	RVE-1/3	* 1/4 x 1/2 SAE - 30"	YES	760	169324	Special order valve	Special order valve	Special order valve
	RVE-1/2	* 3/8 x 1/2 SAE - 30"	YES	760	169380	Special order valve	Special order valve	Special order valve
	RVE-1	* 1/4 x 1/2 SAE - 5"	YES	1500	169322	Special order valve	Special order valve	Special order valve
	RVE-1	* 3/8 x 1/2 SAE - 5"	YES	1500	169366	Special order valve	Special order valve	Special order valve
	RVE-1-1/2	* 3/8 x 1/2 SAE - 5"	YES	1500	169378	Special order valve	Special order valve	Special order valve
	RVE-2	* 3/8 x 1/2 SAE - 5"	YES	1500	169368	Special order valve	Special order valve	Special order valve
	RVE-3	* 3/8 x 1/2 SAE - 5"	YES	1500	169370	Special order valve	Special order valve	Special order valve
	RVE-4	* 3/8 x 1/2 SAE - 5"	YES	1500	169372	Special order valve	Special order valve	Special order valve
	RVE-5	* 3/8 x 1/2 SAE - 5"	YES	1500	169374	Special order valve	Special order valve	Special order valve
	RVE-6	* 3/8 x 1/2 SAE - 5"	YES	1500	169376	Special order valve	Special order valve	Special order valve
	ER	ERV-1/3	* 1/4 x 3/8 ODF - 30"	NO	760	169159	Special order valve	Special order valve
ERV-1/3		* 1/4 x 1/2 ODF - 30"	NO	760	169173	Special order valve	Special order valve	Special order valve
ERV-1/3		* 3/8 x 1/2 ODF - 30"	NO	760	169209	Special order valve	Special order valve	Special order valve
ERV-1/2		* 1/4 x 3/8 ODF - 30"	NO	760	169158	Special order valve	Special order valve	Special order valve
ERV-1/2		* 1/4 x 1/2 ODF - 30"	NO	760	169172	Special order valve	Special order valve	Special order valve
ERV-1/2		* 3/8 x 1/2 ODF - 30"	NO	760	169208	Special order valve	Special order valve	Special order valve
ERV-1		* 3/8 x 1/2 ODF - 5"	NO	1500	169206	Special order valve	Special order valve	Special order valve
ERV-2		* 3/8 x 1/2 ODF - 5"	NO	1500	169207	Special order valve	Special order valve	Special order valve
ERVE-1/3		* 1/4 x 1/2 ODF - 30"	YES	760	169187	Special order valve	Special order valve	Special order valve
ERVE-1/2		* 1/4 x 1/2 ODF - 30"	YES	760	169186	Special order valve	Special order valve	Special order valve
ERVE-1/2		* 3/8 x 1/2 ODF - 30"	YES	760	169246	Special order valve	Special order valve	Special order valve
ERVE-1		* 1/4 x 1/2 ODF - 5"	YES	1500	169185	Special order valve	Special order valve	Special order valve
ERVE-1		* 3/8 x 1/2 ODF - 5"	YES	1500	169230	168796	Special order valve	168798
ERVE-1-1/2		* 3/8 x 1/2 ODF - 5"	YES	1500	169243	168742	Special order valve	168743
ERVE-2		* 3/8 x 1/2 ODF - 5"	YES	1500	169231	168744	Special order valve	168745
ERVE-3		* 3/8 x 1/2 ODF - 5"	YES	1500	169234	168746	Special order valve	168748
ERVE-3		1/2 x 5/8 ODF - 5"	YES	1500	169265	168747	Special order valve	168749
ERVE-4		* 3/8 x 1/2 ODF - 5"	YES	1500	169238	168750	Special order valve	168753
ERVE-4		1/2 x 5/8 ODF - 5"	YES	1500	169268	168751	Special order valve	168754
ERVE-4		1/2 x 7/8 ODF - 5"	YES	1500	169282	168752	Special order valve	168755

\* Supplied with an inlet strainer.  
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## Order Selection Guide R Type

### R407C, R22, R422D

Valve Type	Valve Size	Valve Description	With External Equalizer	Capillary Tube Length in mm	Thermostatic Charge			
					C	CP100	Z	GA
					R Type with 22 (V) Refrigerant			
					Part Number	Part Number	Part Number	Part Number
ER	ERVE-5	* 3/8 x 1/2 ODF - 5'	YES	1500	169241	168756	Special order valve	168759
	ERVE-5	1/2 x 5/8 ODF - 5'	YES	1500	169271	168757	Special order valve	168760
	ERVE-5	1/2 x 7/8 ODF - 5'	YES	1500	169283	168758	Special order valve	168761
	ERVE-6	1/2 x 5/8 ODF - 5'	YES	1500	169274	168762	Special order valve	168766
	ERVE-6	1/2 x 7/8 ODF - 5'	YES	1500	169284	168763	Special order valve	168767
	ERVE-6	5/8 x 7/8 ODF - 5'	YES	1500	169293	168764	Special order valve	168768
	ERVE-8	1/2 x 7/8 ODF - 5'	YES	1500	Special order valve	168769	Special order valve	168772
	ERVE-8	5/8 x 7/8 ODF - 5'	YES	1500	169294	168770	Special order valve	168773
	ERVE-8	5/8 x 1-1/8 ODF - 5'	YES	1500	Special order valve	168771	Special order valve	168774
	ERVE-10	5/8 x 7/8 ODF - 5'	YES	1500	169295	168775	Special order valve	168777
	ERVE-10	5/8 x 1-1/8 ODF - 5'	YES	1500	Special order valve	168776	Special order valve	168778
	ERVE-12	5/8 x 7/8 ODF - 5'	YES	1500	169296	168779	Special order valve	168781
ERVE-12	5/8 x 1-1/8 ODF - 5'	YES	1500	Special order valve	168780	Special order valve	168782	
SR	SRV-1/3	3/8 x 1/2 ODF EXT - 30"	NO	1500	169405	Special order valve	Special order valve	Special order valve
	SRV-1/2	3/8 x 1/2 ODF EXT - 30"	NO	1500	169404	Special order valve	Special order valve	Special order valve
	SRV-1	3/8 x 1/2 ODF EXT - 5'	NO	1500	169402	Special order valve	Special order valve	Special order valve
	SRV-2	3/8 x 1/2 ODF EXT - 5'	NO	1500	169403	Special order valve	Special order valve	Special order valve
	SRVE-1/3	3/8 x 1/2 ODF EXT - 30"	YES	760	169446	Special order valve	Special order valve	Special order valve
	SRVE-1/2	3/8 x 1/2 ODF EXT - 30"	YES	760	169445	Special order valve	Special order valve	Special order valve
	SRVE-1	3/8 x 1/2 ODF EXT - 5'	YES	1500	169435	Special order valve	Special order valve	Special order valve
	SRVE-2	3/8 x 1/2 ODF EXT - 5'	YES	1500	169438	Special order valve	Special order valve	Special order valve
	SRVE-3	3/8 x 1/2 ODF EXT - 5'	YES	1500	169441	Special order valve	Special order valve	Special order valve
SRVE-5	3/8 x 1/2 ODF EXT - 5'	YES	1500	169444	Special order valve	Special order valve	Special order valve	

\* Supplied with an inlet strainer.  
Special order valves or other valve configurations might be available upon request.

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## Order Selection Guide R Type

### R404A, R507, R408A

Valve Type	Valve Size	Valve Description	With External Equalizer	Capillary Tube Length in mm	Thermostatic Charge			
					C	CP115	Z	ZP
					R Type with 404A (S) Refrigerant			
					Part Number	Part Number	Part Number	Part Number
R	RS-1/4	* 1/4 x 1/2 SAE - 30"	NO	760	169308	special order valve	169310	169309
	RS-1/2	* 1/4 x 1/2 SAE - 5'	NO	1500	169305	special order valve	169306	169307
	RS-1/2	* 3/8 x 1/2 SAE - 5'	NO	1500	169337	special order valve	169335	169336
	RS-1	* 3/8 x 1/2 SAE - 5'	NO	1500	169330	special order valve	169331	169329
	RS-1-1/2	* 3/8 x 1/2 SAE - 5'	NO	1500	169332	special order valve	169334	169333
	RSE-1/4	* 1/4 x 1/2 SAE - 30"	YES	760	169319	special order valve	169320	169321
	RSE-1/2	* 1/4 x 1/2 SAE - 5'	YES	1500	169318	special order valve	169317	169316
	RSE-1/2	* 3/8 x 1/2 SAE - 5'	YES	1500	169364	special order valve	169365	169363
	RSE-1	* 3/8 x 1/2 SAE - 5'	YES	1500	169352	special order valve	169353	169351
	RSE-1-1/2	* 3/8 x 1/2 SAE - 5'	YES	1500	169359	special order valve	169358	169357
	RSE-2	* 3/8 x 1/2 SAE - 5'	YES	1500	169356	special order valve	169355	169354
	RSE-3	* 3/8 x 1/2 SAE - 5'	YES	1500	169362	special order valve	169360	169361
ER	ERS-1/6	* 1/4 x 3/8 ODF - 30"	NO	760	169155	special order valve	169156	169157
	ERS-1/6	* 1/4 x 1/2 ODF - 30"	NO	760	169169	special order valve	169170	169171
	ERS-1/6	* 3/8 x 1/2 SAE - 30"	NO	760	169203	special order valve	169204	169205
	ERS-1/4	* 1/4 x 3/8 ODF - 30"	NO	760	169152	special order valve	169153	169154
	ERS-1/4	* 1/4 x 1/2 ODF - 30"	NO	760	169166	special order valve	169167	169168
	ERS-1/4	* 3/8 x 1/2 SAE - 30"	NO	760	169200	special order valve	169201	169202
	ERS-1/2	* 1/4 x 3/8 ODF - 5'	NO	1500	169149	special order valve	169150	169151
	ERS-1/2	* 1/4 x 1/2 ODF - 5'	NO	1500	169163	special order valve	169165	169164
	ERS-1/2	* 3/8 x 1/2 ODF - 5'	NO	1500	169198	special order valve	169197	169199
	ERS-1	* 3/8 x 1/2 ODF - 5'	NO	1500	169191	special order valve	169192	169193
	ERS-1-1/2	* 3/8 x 1/2 ODF - 5'	NO	1500	169195	special order valve	169196	169194
	ERSE-1/6	* 1/4 x 1/2 ODF - 30"	YES	760	169184	special order valve	-	-
	ERSE-1/4	* 1/4 x 1/2 ODF - 30"	YES	760	169181	special order valve	169183	169182
	ERSE-1/2	* 1/4 x 1/2 ODF - 5'	YES	1500	169178	special order valve	169180	169179
	ERSE-1/2	* 3/8 x 1/2 ODF - 5'	YES	1500	169228	special order valve	169229	169227
	ERSE-1	* 1/4 x 1/2 ODF - 5'	YES	1500	169177	special order valve	169176	-
	ERSE-1	* 3/8 x 1/2 ODF - 5'	YES	1500	169216	special order valve	169217	169215
	ERSE-1-1/2	* 3/8 x 1/2 ODF - 5'	YES	1500	169224	special order valve	169223	169222
	ERSE-2	* 3/8 x 1/2 ODF - 5'	YES	1500	169219	special order valve	169220	169218
	ERSE-3	* 3/8 x 1/2 ODF - 5'	YES	1500	169226	special order valve	169221	169225
	ERSE-3	1/2 x 5/8 ODF - 5'	YES	1500	169260	special order valve	169261	169262
	ERSE-4	1/2 x 7/8 ODF - 5'	YES	1500	169278	special order valve	169280	169279
ERSE-6	5/8 x 7/8 ODF - 5'	YES	1500	169287	special order valve	169288	169289	

\* Supplied with an inlet strainer.  
Special order valves or other valve configurations might be available upon request.

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## Order Selection Guide R Type

### R404A, R507, R408A

Valve Type	Valve Size	Valve Description	With External Equalizer	Capillary Tube Length in mm	Thermostatic Charge			
					C	CP115	Z	ZP
					R Type with 404A (S) Refrigerant			
					Part Number	Part Number	Part Number	Part Number
SR	SRS-1/6	3/8 x 1/2 ODF EXT - 30"	NO	760	169399	special order valve	169400	169401
	SRS-1/4	3/8 x 1/2 ODF EXT - 30"	NO	760	169396	special order valve	169397	169398
	SRS-1/2	3/8 x 1/2 ODF EXT - 5'	NO	1500	169393	special order valve	169394	169395
	SRS-1	3/8 x 1/2 ODF EXT - 5'	NO	1500	169389	special order valve	169387	169388
	SRS-1-1/2	3/8 x 1/2 ODF EXT - 5'	NO	1500	169390	special order valve	169391	169392
	SRSE-1/6	3/8 x 1/2 ODF EXT - 30"	YES	760	169432	special order valve	169433	169434
	SRSE-1/4	3/8 x 1/2 ODF EXT - 30"	YES	760	169429	special order valve	169431	169430
	SRSE-1/2	3/8 x 1/2 ODF EXT - 5'	YES	1500	169426	special order valve	169427	169428
	SRSE-1	3/8 x 1/2 ODF EXT - 5'	YES	1500	169413	special order valve	169415	169414
	SRSE-1-1/2	3/8 x 1/2 ODF EXT - 5'	YES	1500	169423	special order valve	169424	169425
	SRSE-2	3/8 x 1/2 ODF EXT - 5'	YES	1500	169417	special order valve	169419	169418
	SRSE-3	3/8 x 1/2 ODF EXT - 5'	YES	1500	169420	special order valve	169422	169421

\* Supplied with an inlet strainer.  
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## Order Selection Guide R Type

### R134a, R409A, R401A

Valve Type	Valve Size	Valve Description	With External Equalizer	Capillary Tube Length in mm	Thermostatic Charge	
					C	CP60
					R Type with R134a (J) Refrigerant	
					Part Number	Part Number
R	RJ-1/4	* 1/4 x 3/8 SAE - 30"	NO	760	169298	Special order valve
	RJ-1/4	* 1/4 x 1/2 SAE - 30"	NO	760	169302	Special order valve
	RJ-1/4	* 3/8 x 1/2 SAE - 30"	NO	760	169328	Special order valve
	RJ-1/2	* 1/4 x 3/8 SAE - 5'	NO	1500	169297	Special order valve
	RJ-1/2	* 1/4 x 1/2 SAE - 5'	NO	1500	169299	Special order valve
	RJ-1/2	* 3/8 x 1/2 SAE - 5'	NO	1500	169327	Special order valve
	RJ-1	* 3/8 x 1/2 SAE - 5'	NO	1500	169325	Special order valve
	RJ-1-1/2	* 3/8 x 1/2 SAE - 5'	NO	1500	169326	Special order valve
	RJ-1-1/2	* 1/4 x 1/2 SAE - 30"	YES	760	169315	Special order valve
	RJE-1/2	* 1/4 x 1/2 SAE - 5'	YES	1500	169314	Special order valve
	RJE-1/2	* 3/8 x 1/2 SAE - 5'	YES	1500	169350	Special order valve
	RJE-1	* 3/8 x 1/2 SAE - 5'	YES	1500	169346	Special order valve
	RJE-1-1/2	* 3/8 x 1/2 SAE - 5'	YES	1500	169349	Special order valve
	RJE-2	* 3/8 x 1/2 SAE - 5'	YES	1500	166347	Special order valve
RJE-3	* 3/8 x 1/2 SAE - 5'	YES	1500	169348	Special order valve	
ERJ-1/6	* 1/4 x 3/8 ODF - 30"	NO	760	169148	Special order valve	
ER	ERJ-1/6	* 1/4 x 1/2 ODF - 30"	NO	760	169162	Special order valve
	ERJ-1/4	* 1/4 x 3/8 ODF - 30"	NO	760	169147	Special order valve
	ERJ-1/4	* 1/4 x 1/2 ODF - 30"	NO	760	169161	Special order valve
	ERJ-1/2	* 1/4 x 3/8 ODF - 5'	NO	1500	169146	Special order valve
	ERJ-1/2	* 1/4 x 1/2 ODF - 5'	NO	1500	169160	Special order valve
	ERJ-1/2	* 3/8 x 1/2 ODF - 5'	NO	1500	169190	Special order valve
	ERJ-1	* 3/8 x 1/2 ODF - 5'	NO	1500	169188	Special order valve
	ERJ-1-1/2	* 3/8 x 1/2 ODF - 5'	NO	1500	169189	Special order valve
	ERJE-1/4	* 3/8 x 1/2 ODF - 5'	YES	760	169175	Special order valve
	ERJE-1/2	* 1/4 x 1/2 ODF - 5'	YES	1500	169174	Special order valve
	ERJE-1/2	* 3/8 x 1/2 ODF - 5'	YES	1500	169214	Special order valve
	ERJE-1	* 3/8 x 1/2 ODF - 5'	YES	1500	169210	Special order valve
	ERJE-1-1/2	* 3/8 x 1/2 ODF - 5'	YES	1500	169213	Special order valve
	ERJE-2	* 3/8 x 1/2 ODF - 5'	YES	1500	169211	Special order valve
	ERJE-2	1/2 x 5/8 ODF - 5'	YES	1500	Special order valve	169257
	ERJE-3	* 3/8 x 1/2 ODF - 5'	YES	1500	169212	Special order valve
	ERJE-3	1/2 x 5/8 ODF - 5'	YES	1500	Special order valve	169258
	ERJE-4	1/2 x 5/8 ODF - 5'	YES	1500	Special order valve	169259
	ERJE-4	1/2 x 7/8 ODF - 5'	YES	1500	Special order valve	169277
	ERJE-5	5/8 x 7/8 ODF - 5'	YES	1500	Special order valve	169285

\* Supplied with an inlet strainer.  
Special order valves or other valve configurations might be available upon request.

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## Order Selection Guide R Type

### R134a, R409A, R401A

Valve Type	Valve Size	Valve Description	With External Equalizer	Capillary Tube Length in mm	Thermostatic Charge	
					C	CP60
					R Type with R134a (J) Refrigerant	
					Part Number	Part Number
SR	SRJ-1/6	3/8 x 1/2 ODF EXT - 30"	NO	760	169386	Special order valve
	SRJ-1/4	3/8 x 1/2 ODF EXT - 30"	NO	760	169385	Special order valve
	SRJ-1/2	3/8 x 1/2 ODF EXT - 5'	NO	1500	169384	Special order valve
	SRJ-1	3/8 x 1/2 ODF EXT - 5'	NO	1500	169383	Special order valve
	SRJ-1-1/2	3/8 x 1/2 ODF EXT - 5'	NO	1500	169382	Special order valve
	SRJE-1/6	3/8 x 1/2 ODF EXT - 30"	YES	760	169410	Special order valve
	SRJE-1/4	3/8 x 1/2 ODF EXT - 30"	YES	760	169411	Special order valve
	SRJE-1	3/8 x 1/2 ODF EXT - 5'	YES	1500	169412	Special order valve
	SRJE-1/2	3/8 x 1/2 ODF EXT - 5'	YES	1500	169408	Special order valve
	SRJE-1-1/2	3/8 x 1/2 ODF EXT - 5'	YES	1500	169409	Special order valve
	SRJE-2	3/8 x 1/2 ODF EXT - 5'	YES	1500	169406	Special order valve
SRJE-3	3/8 x 1/2 ODF EXT - 5'	YES	1500	169407	Special order valve	

\* Supplied with an inlet strainer.  
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## Order Selection Guide R Type

### R410A

Valve Type	Valve Size	Valve Description	With External Equalizer	Capillary Tube Length in mm	Thermostatic Charge	
					CP180	GA
					R Type with R410A (Z) Refrigerant	
					Part Number	Part Number
ER	ERZE-1/3	* 1/4 x 3/8 ODF - 5'	YES	1500	Special order valve	Special order valve
	ERZE-1/2	* 1/4 x 3/8 ODF - 5'	YES	1500	Special order valve	Special order valve
	ERZE-1	* 3/8 x 1/2 ODF - 5'	YES	1500	168878	168790
	ERZE-1-1/2	* 3/8 x 1/2 ODF - 5'	YES	1500	168783	168784
	ERZE-2	* 3/8 x 1/2 ODF - 5'	YES	1500	168737	168786
	ERZE-3	* 3/8 x 1/2 ODF - 5'	YES	1500	168787	168788
	ERZE-4	* 3/8 x 1/2 ODF - 5'	YES	1500	168789	168718
	ERZE-5	* 3/8 x 1/2 ODF - 5'	YES	1500	168791	168792
	ERZE-6	1/2 x 5/8 ODF - 5'	YES	1500	168793	168794
	ERZE-8	1/2 x 7/8 ODF - 5'	YES	1500	168795	168797
	ERZE-8	5/8 x 7/8 ODF - 5'	YES	1500	168736	168719
	ERZE-12-1/2	5/8 x 7/8 ODF - 5'	YES	1500	168799	168801
	ERZE-12-1/2	5/8 x 1-1/8 ODF - 5'	YES	1500	168800	168802
	ERZE-15	5/8 x 7/8 ODF - 5'	YES	1500	168803	168720
ERZE-15	5/8 x 1-1/8 ODF - 5'	YES	1500	168804	168807	

\* Supplied with an inlet strainer.  
Special order valves or other valve configurations might be available upon request.

### R Type Valve

with internal check valve

Valve Type	Refrigerant (Code)	Part Number	Valve Size	VALVE DESCRIPTION	With External Equalizer	Capillary Tube Length in mm
RC	407C, 22 (V)	151265	RCVE-2-GA	3/8 x 1/2 ODF - 30"	YES	760
		151245	RCVE-3-GA	3/8 x 1/2 ODF - 30"	YES	760
		151252	RCVE-4-GA	1/2 x 1/2 ODF - 30"	YES	760
		151258	RCVE-5-GA	1/2 x 1/2 ODF - 30"	YES	760
	410A (Z)	151365	RCZE-2-GA	3/8 x 1/2 ODF - 30"	YES	760
		151366	RCZE-3-GA	3/8 x 1/2 ODF - 30"	YES	760
		151368	RCZE-4-GA	1/2 x 1/2 ODF - 30"	YES	760
		151369	RCZE-5-GA	1/2 x 5/8 ODF - 30"	YES	760
	22 (V)	Special order valves	RCVE-2, 3, 4, 5, 6 - 30"		YES	760
	410A (Z)		RCZE-2, 3, 4, 5, 6 - 30"		YES	760

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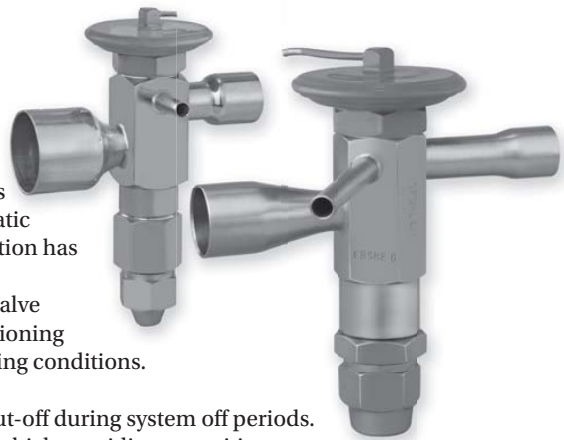
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## Type EBS/O

Parker Sporlan Type **EBS** and **O** valves are a brass bar body, externally adjustable valves with ODF solder 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.



A synthetic seating surface provides tight shut-off during system off periods. These two valve types has three body styles, which providing capacities from 26 kW up to 160 kW R-404A.

These valves can also be ordered as a bidirectional valve, allowing control of flow in both directions for use on heat pump applications.

### Specifications & Materials/Details of Construction

<b>Body</b>	Machined Brass bar	
<b>Seat</b>	Brass Port Machined in Body	
<b>Pin</b>	Stainless Steel	
<b>Pushrod</b>	Stainless Steel	
<b>Element to Body Joint Type</b>	Knife Edge to Metal	
<b>Connections</b>	ODF Copper Fittings Silver Soldered to Body	
<b>Inlet Strainer</b>	Permanent 12 mesh strainer	
<b>Operating Temp. Range</b>	-40°C to 10°C (-40°F to 50°F)	
<b>MRP</b>	48.3 bar (700 psig) for R-410A only / 31.0 bar (450 psig)	
<b>Maximum Temperature</b>	121°C (250°F) Limited Exposure Time	
<b>Max Ambient Temp.</b>	60°C (140°F)	
<b>Max Bulb Temp.</b>	ZGA, ZCP180 (R410A) Element Charge	71.1°C (160°F)
	GA, CP, ZP all Refrigerants excl R410A	121°C (250°F)
	JC (R134a) Element Charge	87.8°C (190°F)
	VC (R407C) Element Charge	71.1°C (160°F)
	SC (R404A) Element Charge	65.6°C (150°F)
	SZ (R404A) Element Charge	76.7°C (170°F)
<b>Max External Leakage</b>	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
<b>UL</b>	SA5460	
<b>Compatibility</b>	All HFC, HCFC, Refrigerants and blends	

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### Certification:

The Type EBS and O Thermostatic Expansion Valves comply with the Directive(s) 97-23-EC.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)

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## EBS and O Thermostatic Expansion Valves

### Benefits

- Selective thermostatic charges provide optimum performance for all common applications air conditioning and heat pump, medium and low temp. refrigeration
- Stainless steel diaphragm and welded element construction
- Large flat diaphragm permits precise valve control
- Balanced Port Design provides excellent control on applications with widely varying operation conditions
- Externally adjustable
- The copper bulb design provides an excellent heat transfer
- Replaceable Thermostatic Elements

### Options

- CP180, ZGA charge available for R410A systems
- Pressure limiting charge (CP) and anti hunting charge (GA) available
- Bi- flow feature

Nominal Capacity Tons of Refrigeration				Connections - Inches*		Connections - mm*	
R-410A	R-407C	R-134a	R-404A, R507	Inlet	Outlet	Inlet	Outlet
-	-	7	7-1/2	5/8	7/8	15.9	22.2
-	15	9	10	7/8	1-1/8	22.2	28.6
20	20	12	12	7/8	1-3/8	22.2	34.9
25	30	16	21	1-1/8	1-3/8	28.6	34.9
35	40	23	30	1-1/8	1-3/8	28.6	34.9
50	55	32	35	1-1/8	1-3/8	28.6	34.9
60	70	40	45	1-1/8	1-3/8	28.6	34.9

\* Some fitting combinations may not be available

TEV capacity ratings for R-134a, R-401A, R-404A, R-407C, R-408A, 409A, R-410A, and R-422D are based on vapor free 38°C liquid refrigerant entering the expansion valve, a maximum opening superheat of 4K, 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 10°C, 5°C, -5°C, -15°C, -20°C, -30°C, -40°C in the capacity tables are in accordance with ANSI/ARI Standard Number 750. TEVs are tested in accordance with ANSI/ASHRAE 17. For TEV capacity ratings at operating conditions not shown in the following tables, contact RACE Division of Parker.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [raccustomerservice@parker.com](mailto:raccustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## 0 Thermostatic Expansion Valves Selection Tables

### Air Conditioning, Heat Pump and Commercial Refrigeration Applications

Valve Size	Nominal Capacity	Refrigerant											
		R422D						407C					
		Recommended Thermostatic Charge											
		VC, VCP100, VGA				VZ, VZP**40				VC, VCP100*, VGA			
		Evaporator Temperature °C											
kW	10°	5°	-5°	-15°	-20°	-30°	-40°	10°	5°	-5°	-15°	-20°	
15	110	32.6	31.1	32.5	27.3	24.5	15.2	11.5	47	89.4	94.9	81.2	37.8
20	130	48.2	46	48.1	40.4	38.4	22.6	18.1	69.6	111	118	97.3	59.2
30	140	66.2	63.2	66.1	55.5	50.3	32.2	26.8	95.6	118	130	102	77.6
40	190	85.8	83.3	90.4	69.6	65.8	49.1	40.8	124	161	177	139	101
55	250	117	114	123	95	89	56	45.4	169	214	235	184	137
70	320	155	151	164	126	118	63.5	49.4	224	263	290	226	181

\* MOP point CP100 ≈ 14°C, \*\*MOP point ZP40 ≈ -12°C

Optional bi-directional feature is available for valve size 15, 20 and 30, please refer to the order selection guide.

### Liquid Temperature Entering TEV °C

Refrigerant	-10°	0°	10°	20°	30°	50°	60°
	Correction Factor, CF						
407C	1.73	1.59	1.45	1.3	1.15	0.84	0.67
422D	1.86	1.68	1.5	1.33	1.14	0.77	0.57

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -40°C to 10°C since the variation in the actual factors across this range is insignificant.

407C, 422D Evaporateur Temperature °C	Pressure Drop Across TEV bar							
	2	4	6	8	10	12	14	16
	Correction Factor, CF							
5° & 10°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63
-5° & -15°	0.50	0.71	0.87	1.00	1.12	1.22	1.32	1.41
-20° & -30°	0.45	0.63	0.77	0.89	1.00	1.11	1.18	1.26
-40°	0.41	0.58	0.71	0.82	0.91	1.00	1.08	1.15

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 130 kW R-407C Type O valve at -5°C evaporator, 10 bar pressure drop across the TEV and a 30°C liquid temperature entering the TEV = 118 (from rating chart) x 1.15 (CF liquid temperature) x 1.12 (CF pressure drop) = 152 kW.

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## O Thermostatic Expansion Valves Selection Tables

### Air Conditioning, Heat Pump and Commercial Refrigeration Applications

Valve Size	Nominal Capacity	Refrigerant R410A			
		Recommended Thermostatic Charge			
		ZCP180°, ZGA			
		Evaporator Temperature °C			
	kW	10°	5°	-5°	-15°
20	70	67.7	68.1	75.1	71.5
25	88	81.2	81.7	90.1	85.8
35	120	112	112	124	118
50	180	169	170	188	179
60	210	203	204	225	215

\* MOP point CP180 ≈ 15°C

Optional bi-directional feature is available for valve size 20, 25 and 35, please refer to the order selection guide.

### Liquid Temperature Entering TEV °C

Refrigerant 410a	20°	30°	40°	50°	60°
	Correction Factor, CF				
	1.30	1.15	1.00	0.84	0.65

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -15°C to 10°C since the variation in the actual factors across this range is insignificant.

R410A Evaporator Temperature °C	Pressure Drop Across TEV bar				
	8	11	14	17	20
	Correction Factor, CF				
5° & 10°	0.85	1.00	1.13	1.24	1.35
-5° & -15°	0.76	0.89	1.00	1.10	1.20

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 88 kW R-410A Type O valve at -15°C evaporator, 17 bar pressure drop across the TEV and a 30°C liquid temperature entering the TEV = 85.8 (from rating chart) x 1.15 (CF liquid temperature) x 1.10 (CF pressure drop) = 108.5 kW.

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# EBS and O Thermostatic Expansion Valves Selection Tables

## Air Conditioning, Heat Pump and Commercial Refrigeration Applications

Valve Size	Nominal Capacity	Refrigerant											
		404A, 507**						408A					
		Recommended Thermostatic Charge											
		SCP115*, SC			SZ, SZP*			SCP115, SC			SZ, SZP		
		Evaporator Temperature °C											
kW	5°	-5°	-15°	-20°	-30°	-40°	5°	-5°	-15°	-20°	-30°	-40°	
7-1/2	26	24.5	25.3	21.3	20.5	13.5	12.6	33.4	34.9	33.5	29.1	19.6	17
10	35	30.2	31.7	25.3	24.6	17.9	15.4	41.1	43.9	39.8	34.9	25.9	21
12	42	42	42	34.2	34.3	27.2	23.5	57.2	58.1	48.1	48.7	39.4	34.9
21	74	67.8	67.9	51.1	46.3	32.6	28.1	92.4	93.8	71.7	65.7	47.2	41.8
30	110	97.1	106	81.7	72.8	48.8	42.1	132	146	115	103	70.7	62.6
35	120	113	123	94.7	82.6	52.9	45.7	153	169	133	117	76.7	68
45	160	145	158	122	103	61	52.7	197	218	171	146	88.4	78.3

\* MOP point CP115= 10°C, MOP point ZP= -17°C

\*\* At low temp. Applications capacities are almost the same when using the "S" charge for R507, for medium temp. Applications the Superheat may need adjusting.

Valve size 7-1/2 is approved for bi-directional applications.

4

## Liquid Temperature Entering TEV °C

Refrigerant	-10°	0°	10°	20°	30°	40°	50°	60°
	Correction Factor, CF							
404A	1.89	1.72	1.56	1.37	1.19	1	0.79	0.56
408A	1.58	1.46	1.34	1.22	1.1	0.97	0.85	0.71

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -40°C to 5°C since the variation in the actual factors across this range is insignificant.

Evaporator Temperature °C	Pressure Drop Across TEV bar							
	2	4	6	8	10	12	14	16
	Correction Factor, CF							
5°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63
-5° & -15°	0.50	0.71	0.87	1.00	1.12	1.22	1.32	1.41
-20° & -30°	0.45	0.63	0.77	0.89	1.00	1.11	1.18	1.26
-40°	0.41	0.58	0.71	0.82	0.91	1.00	1.08	1.15

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 74 kW R-404A Type O valve at -5°C evaporator, 10 bar pressure drop across the TEV, and a 30°C liquid temperature entering the TEV = 67.9(from rating chart) x 1.19 (CF liquid temperature) x 1.12 (CF pressure drop) = 90.5 kW.

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# EBS and O Thermostatic Expansion Valves Selection Tables

## Air Conditioning, Heat Pump and Commercial Refrigeration Applications

Valve Size	Nominal Capacity	Refrigerant											
		134a				409A				401A			
		Recommended Thermostatic Charge											
		JC, JCP60*				FC, FCP60				FC, FCP60			
		Evaporator Temperature °C											
kW	10°	5°	-5°	-15°	10°	5°	-5°	-15°	10°	5°	-5°	-15°	
7	25	31.5	28.7	28.6	24.6	31.6	28.9	28.9	25	33.8	30.9	31	26.8
9	32	42.5	38.1	36.3	29.5	42.7	38.4	36.7	30	45.6	41	39.4	32.2
12	42	50.9	47.8	51.1	44.8	51.2	48.1	51.7	45.6	54.6	51.4	55.4	49
16	56	67.5	63.3	67.7	59.4	67.8	63.7	68.5	60.5	72.3	63	68.5	60.4
23	81	96.3	96.6	108	92.6	96.7	94.2	110	94.2	103	94	109	94.2
32	110	134	130	150	129	135	131	151	131	144	131	152	131
40	140	167	163	188	161	168	164	190	164	180	164	190	164

\* MOP point CP60 = 12°C

Valve size 7 is approved for bi-directional applications.

Liquid Temperature Entering TEV °C								
Refrigerant	-10°C	0°	10°	20°	30°	40°	50°	60°
Correction Factor, CF								
134a	1.64	1.52	1.39	1.26	1.13	1.00	0.87	0.73
409A	1.51	1.41	1.31	1.21	1.11	1.00	0.89	0.78
401A	1.52	1.42	1.31	1.2	1.09	0.98	0.86	0.74

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -15°C to 10°C since the variation in the actual factors across this range is insignificant.

Evaporator Temperature °C	Pressure Drop Across TEV bar							
	2	4	6	8	10	12	14	16
	Correction Factor, CF							
5° & 10°	0.71	1.00	1.22	1.41	1.58	1.73	1.87	2.00
-5° & -15°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

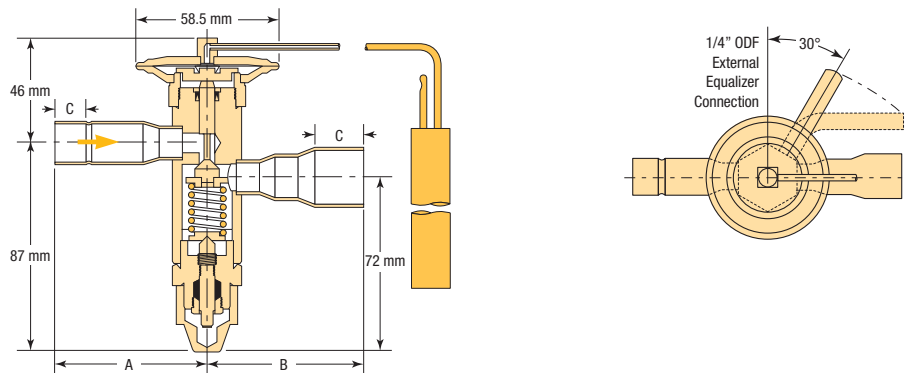
**Example:** Actual capacity of a nominal 56 kW R-134a Type O valve at -5°C evaporator, 8 bar pressure drop across the TEV, and a 30°C liquid temperature entering the TEV = 67.7 (from rating chart) x 1.13 (CF liquid temperature) x 1.15 (CF pressure drop) = 88kW.

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## Valve Dimensions

### Type EBS



#### Dimensions Connections

Valve Type	Fitting Size Inches	mm		
		A	B	C
EBS	3/8 ODF	62	-	9
	1/2 ODF	62	-	13
	5/8 ODF	62	64	19
	7/8 ODF	-	64	20.5
	1-1/8 ODF	-	77	24.5

#### Bulb Sizes

Standard Charges	Refrigerant			
	22	134a	404A	507
C	13 OD x 89			
Z & ZP Series	13 OD x 89	-	13 OD x 89	
CP Series	13 OD x 89			-
VGA	19 OD x 51	-	-	-

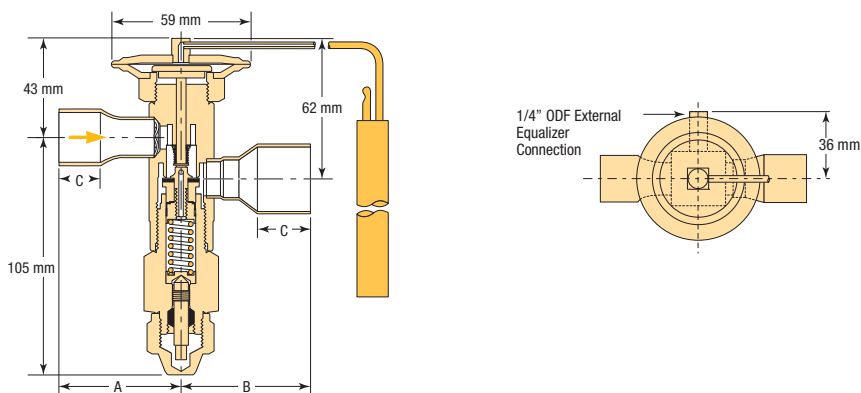
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# Valve Dimensions

## Type O Small



### Dimensions Connections

Valve Type	Fitting Size Inches	mm		
		A	B	C
O	1-1/8 ODF	68	-	23
	1-3/8 ODF	-	76	25
	1-5/8 ODF	-	79	28

### Bulb Sizes

Standard Charges	Refrigerant				
	22	134a	404A	410A	507
C	19 OD x 102	13 OD x 127	19 OD x 102	-	19 OD x 102
Z & ZP Series	19 OD x 102	-	19 OD x 102	-	19 OD x 102
CP Series	19 OD x 102		-		
VGA	19 OD x 102	-	-	-	-
ZGA	-	-	-	19 OD x 51	-

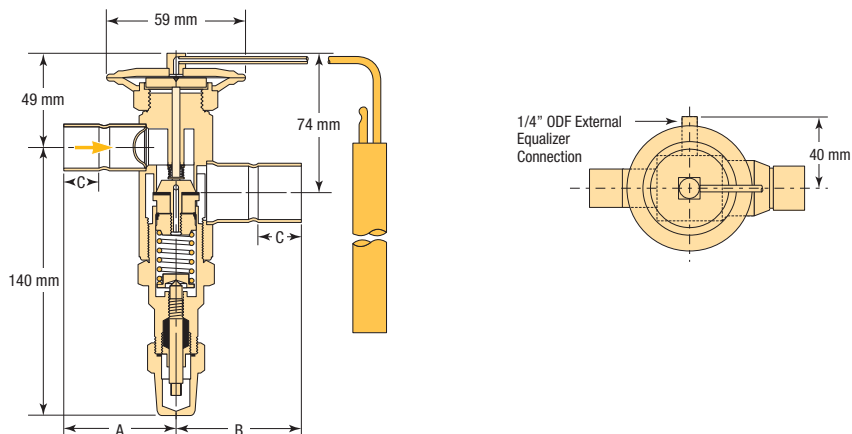
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## Valve Dimensions

### Type O Large



4

#### Dimensions Connections

Valve Type	Fitting Size Inches	mm		
		A	B	C
O	7/8 ODF	53	-	19
	1-1/8 ODF	56	57	25
	1-3/8 ODF	-	61	25

#### Bulb Sizes

Standard Charges	Refrigerant				
	22	134a	404A	410A	507
C	-	13 OD x 89	-	-	13 OD x 89
Z & ZP Series	13 OD x 89	-	13 OD x 89	-	13 OD x 89
CP Series	-	13 OD x 89	-	-	-
VGA	19 OD x 51	-	-	-	-
ZGA	-	-	-	19 OD x 51	-

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## Order Selection Guide

### EBS & O Type

Valve Size	Refrigerant	Part Number	Valve Size / Charge	Valve Description
Small EBS / O	22, 407C, 422D (V)	124366	OVE-15-C	7/8 x 1-1/8 ODF - 5'
		124296	OVE-15-CP100	7/8 x 1-1/8 ODF - 5'
		125472	OVEB-15-CP100 (Bi-flow)	7/8 x 1-1/8 ODF - 5'
		125473	OVEB-15-CP100 (Bi-flow)	5/8 x 7/8 ODF - 5'
		124226	OVE-15-GA	7/8 x 1-1/8 ODF - 5'
		124373	OVE-20-C	7/8 x 1-3/8 ODF - 5'
		124303	OVE-20-CP100	7/8 x 1-3/8 ODF - 5'
		125470	OVEB-20-CP100 (Bi-flow)	1-1/8 x 1-3/8 ODF - 5'
		124233	OVE-20-GA	7/8 x 1-3/8 ODF - 5'
		124310	OVE-30-CP100	1-1/8 x 1-3/8 ODF - 5'
		125471	OVEB-30-CP100 (Bi-flow)	1-1/8 x 1-3/8 ODF - 5'
		124240	OVE-30-GA	1-1/8 x 1-3/8 ODF - 5'
		163507	EBSSE-7-1/2-C	5/8 x 7/8 ODF - 5'
		163509	EBSSE-7-1/2-ZP	5/8 x 7/8 ODF - 5'
	163547	EBSSE-7-1/2-CP115	5/8 x 7/8 ODF - 5'	
	163877	EBSSE-10-C	7/8 x 1-1/8 ODF - 5'	
	163752	EBSSE-10-ZP	7/8 x 1-1/8 ODF - 5'	
	163724	EBSSE-10-CP115	7/8 x 1-1/8 ODF - 5'	
	124214	OSE-12-C	7/8 x 1-3/8 ODF - 5'	
	124225	OSE-12-ZP	7/8 x 1-3/8 ODF - 5'	
	124333	OSE-12-CP115	7/8 x 1-3/8 ODF - 5'	
	124215	OSE-21-C	1-1/8 x 1-3/8 ODF - 5'	
	124231	OSE-21-ZP	1-1/8 x 1-3/8 ODF - 5'	
	124163	OSE-21-CP115	1-1/8 x 1-3/8 ODF - 5'	
	163506	EBSJE-7-CP60	5/8 x 7/8 ODF - 5'	
	163505	EBSJE-7-C	5/8 x 7/8 ODF - 5'	
	163897	EBSJE-9-CP60	7/8 x 1-1/8 ODF - 5'	
	164995	EBSJE-9-C	7/8 x 1-1/8 ODF - 5'	
	124212	OJE-12-CP60	7/8 x 1-3/8 ODF - 5'	
	125519	OJE-12-C	7/8 x 1-3/8 ODF - 5'	
	125527	OJE-16-CP60	1-1/8 x 1-3/8 ODF - 5'	
	124209	OJE-16-C	1-1/8 x 1-3/8 ODF - 5'	
	125428	OZE-20-GA	7/8 x 1-3/8 ODF - 5'	
	125436	OZEB-20-GA (Bi-flow)	7/8 x 1-1/8 ODF - 5'	
	125697	OZEB-20-GA (Bi-flow)	1-1/8 x 1-1/8 ODF - 5'	
	Special order valve	OZE-20-CP180	7/8 x 1-3/8 ODF - 5'	
	125372	OZE-25-GA	1-1/8 x 1-3/8 ODF - 5'	
	125482	OZEB-25-GA (Bi-flow)	7/8 x 1-1/8 ODF - 5'	
	125699	OZEB-25-GA (Bi-flow)	1-1/8 x 1-1/8 ODF - 5'	
	Special order valve	OZE-25-CP180	1-1/8 x 1-3/8 ODF - 5'	
	125399	OZE-35-GA	1-1/8 x 1-3/8 ODF - 5'	
	125695	OZEB-35-GA (Bi-flow)	1-1/8 x 1-1/8 ODF - 5'	
	168813	OZEB-35-GA (Bi-flow)	1-1/8 x 1-3/8 ODF - 5'	
	Special order valve	OZE-35-CP180	1-1/8 x 1-3/8 ODF - 5'	
	407C, 22, 422D (V), 134a, 409A, 401A (J) 404A, 507, 408A (S) 410A (Z)	Special order valves		OVE-15, 20, 30 - 5'
				OJE-12, 16 - 5'
				OSE-12, 21 - 5'
				OZE-20, 25, 35 - 5'

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## Order Selection Guide

### O Type

Valve Size	Refrigerant	Part Number	Valve Size / Charge	Valve Description
Large O	22, 407C, 422D (V)	124387	OVE-40-C	1-1/8 x 1-3/8 ODF - 5'
		124317	OVE-40-CP100	1-1/8 x 1-3/8 ODF - 5'
		124247	OVE-40-GA	1-1/8 x 1-3/8 ODF - 5'
		124331	OVE-55-CP100	1-1/8 x 1-3/8 ODF - 5'
		124261	OVE-55-GA	1-1/8 x 1-3/8 ODF - 5'
		124345	OVE-70-CP100	1-1/8 x 1-3/8 ODF - 5'
		124275	OVE-70-GA	1-1/8 x 1-3/8 ODF - 5'
	134a, 409A, 401A (J)	124647	OJE-23-CP60	1-1/8 x 1-3/8 ODF - 5'
		124859	OJE-23-C	1-1/8 x 1-3/8 ODF - 5'
		124652	OJE-32-CP60	1-1/8 x 1-3/8 ODF - 5'
		124701	OJE-32-C	1-1/8 x 1-3/8 ODF - 5'
		124631	OJE-40-CP60	1-1/8 x 1-3/8 ODF - 5'
		125528	OJE-40-C	1-1/8 x 1-3/8 ODF - 5'
		404A, 507, 408A, (S)	124819	OSE-30-C
	124750		OSE-30-ZP	1-1/8 x 1-3/8 ODF - 5'
	124156		OSE-35-C	1-1/8 x 1-3/8 ODF - 5'
	124145		OSE-35-ZP	1-1/8 x 1-3/8 ODF - 5'
	124127		OSE-45-C	1-1/8 x 1-3/8 ODF - 5'
	124153		OSE-45-ZP	1-1/8 x 1-3/8 ODF - 5'
	410A (Z)		125426	OZE-50-GA
		Special order valve	OZE-50-CP180	1-1/8 x 1-3/8 ODF - 5'
		125467	OZE-60-GA	1-1/8 x 1-3/8 ODF - 5'
		Special order valve	OZE-60-CP180	1-1/8 x 1-3/8 ODF - 5'
	407C, 22, 422D (V), 134a, 409A, 401A (J) 404A, 507, 408A (S) 410A (Z)	Special order valves		OJE-23, 32, 40 - 5'
				OVE-40, 55, 70 - 5'
				OSE-30, 35, 45 - 5'
				OZE-50, 60 - 5'

Special order valves or other valve configurations might be available upon request.

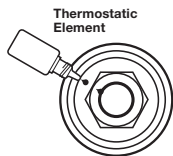
All "EBS" and "O" Type valves are supplied with a 1.5 meter length of capillary tube and with a 1/4" ODF equalizer connection.

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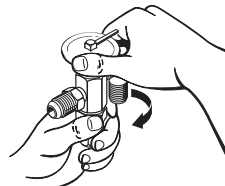
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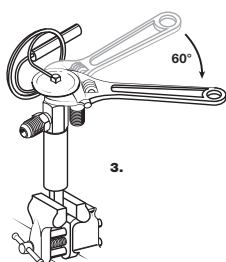
# Thermostatic Element Installation



1. (Oil) Lubricate locking surface.



2. Hand tighten element.



3.

View of Element



4. After hand tight, turn element clock wise 60° (or movement equal to one hex flat).

Miscellaneous Parts		Part Number
Oil Bottle (With Oil)	OB-1	184001

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## Valve Thermostatic Element Kits

### Type R, EBS & O

Valve Size	Refrigerant (Code)	Element Kit No.	Tubing Length	Part Number	Tubing Length	Part Number		
<b>The following Kits contain: 1 Thermostatic Element, 2 Bulb Clamps, 2 Bolts and Nuts.</b>								
(E)R, SR (1-8)	410A(Z)	KT-45-ZCP180	30 in/760 mm	181355	5 ft/1500 mm	181213		
		KT-45-ZGA		181209		181212		
(E)R, SR (10-12)	407C, 22(V)	KT-45-5-VCP100	30 in/760 mm	-	5 ft/1500 mm	181217		
		KT-45-5-VGA		-		-		
(E)R, SR (12.5-15)	410A(Z)	KT-45-5-ZCP180	30 in/760 mm	-	5 ft/1500 mm	181216		
		KT-45-5-ZGA		-		180298		
(E)R, SR, (E)BO, SBQ	134a(J)	KT-43-JC	30 in/760 mm	180314	5 ft/1500 mm	180310		
		KT-43-JCP60		180206		180312		
		KT-43-JZ		180350		179914		
		KT-43-JZP		-		180354		
	407C, 22(V)	KT-43-VGA	30 in/760 mm	180284	5 ft/1500 mm	180276		
		KT-43-VCP100		180270		180272		
		KT-43-VC		180269		180319		
		KT-43-VZ		180273		180323		
	404A(S)	KT-43-VZP40	30 in/760 mm	180326	5 ft/1500 mm	180324		
		KT-43-SC		180330		180204		
		KT-43-SCP115		180372		180360		
		KT-43-SZ		180228		180318		
	EBS Small O	134a(J)	KT-83-JCP60	5 ft/1500 mm	180230	-	180060	
			KT-83-JC		180053		181126	
407C, 22(V)		KT-83-VGA	180905		180891			
		KT-83-VCP100	180891		180887			
		KT-83-VC	180921		180926			
		KT-83-VZ	180921		181030			
404A(S)		KT-83-VZP40	5 ft/1500 mm		180926		-	181030
		KT-83-SC			181030			-
		KT-83-SCP115			179934			-
		KT-83-SZ			180062			-
Small O	410A(Z)	KT-85-ZGA	5 ft/1500 mm	180918	-	-		
		KT-85-ZCP180		181353		-		
		KT-85-3-ZGA		183366		-		
Large O	410A(Z)	KT-85-3-ZCP180	5 ft/1500 mm	-	-	-		
		KT-85-3-ZGA		-		-		
Large O	134a(J)	KT-33-JCP60	5 ft/1500 mm	180051	-	-		
		KT-33-JC		180028		-		
	22(V)	KT-33-VGA		5 ft/1500 mm		180041	-	-
		KT-33-VCP100				180029		-
		KT-33-VC				180025		-
		KT-33-VZ				180055		-
	404A(S)	KT-33-VZP40		5 ft/1500 mm		180250	-	-
		KT-33-SC				180086		-
		KT-33-SCP115				180110		-
		KT-33-SZ				180088		-
		KT-33-SZP				180102		-
		KT-33-SZP				180102		-

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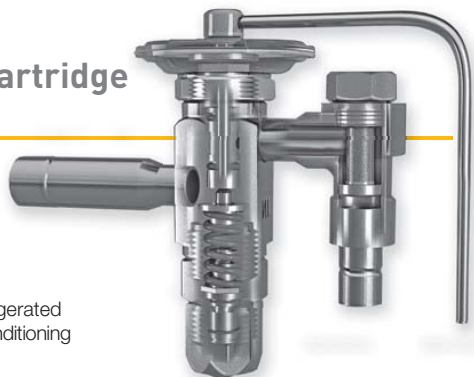
# Balanced Ported Exchangeable Cartridge Thermostatic Valves

## Type BQ

The **BQ Valves Series** are replaceable cartridge style balanced port Thermostatic Expansion Valve. These valves will be supplied with three component parts: body, cartridge, and thermostatic element.

It is designed for small refrigeration systems, including refrigerated cases, coolers and freezers, and are also well suited for air conditioning and heat pump duties.

Sporlan valves are designed with the refrigerant flowing against the valve pin. This design feature improves valve control when light loads occur and the pin modulates close to the valve port.



## 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.

BQE	3/8 x 1/2 x 1/4 SAE	BQC	AAA	KT-43	V	C	5'
<b>BQ, EBQ, SBQ</b> = <b>Internally Equalized</b>	Connection Size and Style: Inlet x Outlet x External Equalizer	Cartridge Type	Cartridge Size	Element Kit KT-43 or KT-45  R410A only	Parker Sporlan Code - Refrigerant Element Label Color Code  V/N = R-22, R-407C, R-422D Green or Lt. Brown J = R-134A, R-409A, R-401A Blue, Yellow or Pink S = R-404A, R-408A / Orange P = R507 / Teal Z = R-410A / Rose	Thermostatic Charge	Capillary Tubing Length  Inches or Feet
<b>BQE, EBQE, SBQE</b> = <b>Externally Equalized</b>							

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

Parker Sporlan Selective Charges engineered for peak performance for each specific application

### Recommended Thermostatic Charges\*

Application	Refrigerant													THERMOSTATIC ELEMENT	SYSTEM MOB psig
	12	22, 422D	134a	401A	402A	404A	407A	407C	408A	409A	410A	502	507		
Air Conditioning	X	-	X	X	-	-	-	-	-	X	-	-	-	KT-43-JCP60	50
	-	X	-	-	-	-	X	X	-	-	-	-	-	KT-43-VCP100	90
	-	X	-	-	-	-	X	X	-	-	-	-	-	KT-43-VGA	-
	-	-	-	-	-	X	-	-	X	-	-	X	-	KT-43-SCP115	105
	-	-	-	-	-	-	-	-	-	-	X	-	-	KT-45-ZGA	-
Commercial Refrigeration 10°C to -25°C	X	-	X	X	-	-	-	-	-	X	-	-	-	KT-43-JC	-
	-	X	-	-	-	-	X	X	-	-	-	-	-	KT-43-VC	-
	-	-	-	-	-	X	-	-	X	-	-	X	-	KT-43-SC	-
	-	-	-	-	X	-	-	-	-	-	-	-	X	KT-43-PC	-
Low Temperature Refrigeration -20°C to -40°C	-	X	-	-	-	-	-	-	-	-	-	-	-	KT-43-VZ	-
	-	X	-	-	-	-	-	-	-	-	-	-	-	KT-43-VZP40	30
	-	-	-	-	X	X	-	-	X	-	-	X	X	KT-43-SZ	-
	-	-	-	-	X	X	-	-	X	-	-	X	X	KT-43-SZP	35

\* Applications Factors:

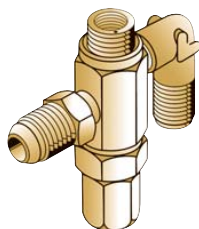
- The Type ZPCP charges have essentially the same characteristics as the Type Z,C charge with one exception: they produce a pressure limit. Maximum Operating Pressure (MOP). ZPCP charges are not intended as replacements for Z,C charges. Each should be selected for its own unique purpose.
- All air conditioning and heat pump charges are intended for use with externally equalized valves.

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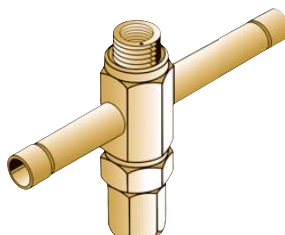


## BQ Valve Components

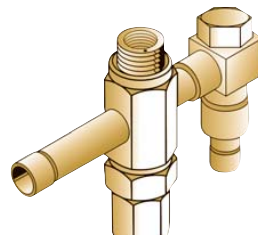
### Body Type



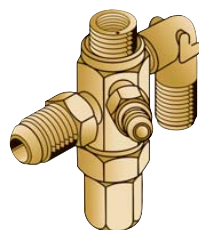
**BQ SAE**  
Internally Equalized



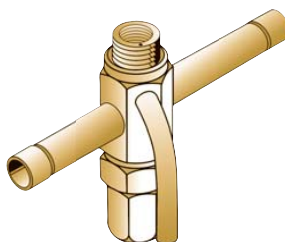
**EBQ ODF**  
Internally Equalized



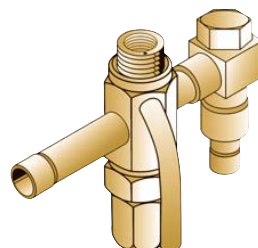
**SBQ ODF**  
Internally Equalized



**BQE SAE**  
Externally Equalized



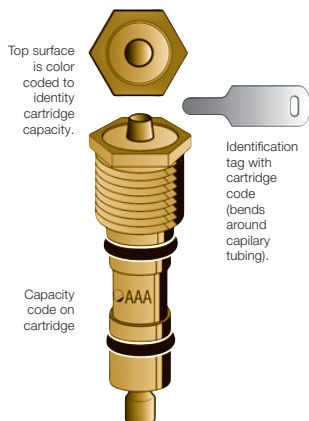
**EBQE ODF**  
Externally Equalized



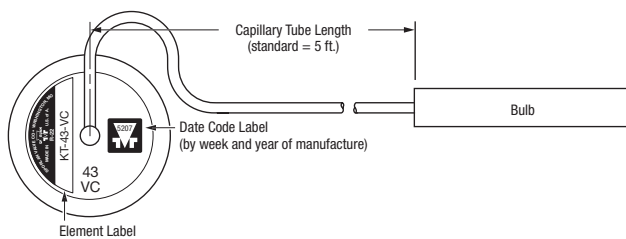
**SBQE ODF**  
Externally Equalized

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### Cartridge



### Thermostatic Element



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## Specifications & Materials/Details of Construction

<b>Body</b>	Machined Brass bar	
<b>Seat</b>	Brass Port Machined in Body	
<b>Pin</b>	Stainless Steel	
<b>Pushrod</b>	Stainless Steel	
<b>Element to Body Joint Type</b>	Knife Edge to Metal	
<b>Connections</b>	SAE Flare, ODF Copper Fittings Silver Soldered to Body	
<b>Inlet Strainer</b>	Insert Strainer, Removable Strainer	
<b>Operating Temp. Range</b>	-40°C to 10°C (-40°F to 50°F)	
<b>MRP</b>	48.3 bar (700 psig) for R-410A only / 31.0 bar (450 psig)	
<b>Maximum Temperature</b>	121°C (250°F) Limited Exposure Time	
<b>Max Ambient Temp.</b>	60°C (140°F)	
<b>Max Bulb Temp.</b>	ZGA, ZCP180 (R410A) Element Charge	71.1°C (160°F)
	GA, CP, ZP all Refrigerants excl R410A	121°C (250°F)
	JC (R134a) Element Charge	87.8°C (190°F)
	VC (R407C) Element Charge	71.1°C (160°F)
	SC (R404A) Element Charge	65.6°C (150°F)
	SZ (R404A) Element Charge	76.7°C (170°F)
<b>Max External Leakage</b>	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
<b>UL</b>	SA5460	
<b>Compatibility</b>	All HFC, HCFC, Refrigerants and blends	

### Certification:

The Type BQ Thermostatic Expansion Valves comply with the Directive(s) 97-23-EC.

### Benefits

- **Selective thermostatic charges provide optimum performance for all common applications - air conditioning and heat pump, medium and low temp. refrigeration**
- **Stainless steel diaphragm and welded element construction**
- **Large flat diaphragm permits precise valve control**
- **Balanced Port Design provides excellent control on applications with widely varying operation conditions**
- **Externally adjustable**
- **Excellent Bi-Flow Control for Heat Pump Applications (only for valves with external equalizer)**
- **The copper bulb design provides an excellent heat transfer**
- **Replaceable Thermostatic Elements**
- **Wide capacity range with only 5 Exchangeable Orifices**

## Options

- ZCP180, ZGA charge available for R410A systems
- SAE (with 100 mesh strainer) or ODF (with 60x 50 mesh stainless steel wire cloth strainer) connections
- External or internal equalizer
- Pressure limiting charge (CP) and anti hunting charge (GA) available
- Cartridge available with 15% bleed port

Nominal Capacity in kW				Cartridge		
R-410A	R-22, R-407C	R-134a	R-404A, R507	Size	Cartridge Code	Color Code
1.17	1.16	0.7	0.7	AAA	BQC-AAA	Red
2.64	2.35	1.16	1.16	AA	BQC-AA	Yellow
6.15	5.25	3.5	3.5	A	BQC-A	Blue
2.3	10.5	6.13	6.13	B	BQC-B	Pink
21.1	19.25	10.5	10.5	C	BQC-C	White

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TEV capacity ratings for R-134a, R-401A, R-404A, R-407C, R-408A, 409A, R-410A, and R-422D are based on vapor free 38°C liquid refrigerant entering the expansion valve, a maximum opening superheat of 4K, 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 10°C, 5°C, -5°C, -15°C, -20°C, -30°C, -40°C in the capacity tables are in accordance with ANSI/ARI Standard Number 750.

TEVs are tested in accordance with ANSI/ASHRAE 17. For TEV capacity ratings at operating conditions not shown in the following tables, contact us.

## 3 Step Order Selection Guide

### 1 - Available BQ Valves Bodies

Valve Type	Part Number	Valve Description
BQ	168191	BQ BODY 1/4 x 1/2 SAE
	168190	BQ BODY 3/8 x 1/2 SAE
	168184	BQE BODY 1/4 x 1/2 SAE
BQE	168183	BQE BODY 3/8 x 1/2 SAE
	168193	SBQ BODY 3/8 x 1/2 ODF
SBQ	168198	SBQE BODY 3/8 x 1/2 ODF
SBQE	168033	EBQ BODY 1/4 x 3/8 ODF
	168051	EBQ BODY 1/4 x 1/2 ODF
EBQ*	168194	EBQ BODY 3/8 x 1/2 ODF
	168035	EBQE BODY 1/4 x 3/8 ODF
EBQE*	168044	EBQE BODY 1/4 x 1/2 ODF
	168186	EBQE BODY 3/8 x 1/2 ODF
	168187	EBQE BODY 1/2 x 5/8 ODF
	168188	EBQE BODY 1/2 x 7/8 ODF

\* All EBQ(E) bodies are supplied with an 877 Series inlet strainer.

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### 2 - BQ Valves Cartridge

Size	Color Code	Cartridge Size	Part Number
AAA	Red	BQC-AAA	168303
AA	Yellow	BQC-AA	168304
A	Blue	BQC-A	168306
B	Pink	BQC-B	168307
C	White	BQC-C	168308
AA (bleed port)	Yellow/Black	BQC-AA-BP15	168701
A (bleed port)	Blue/Black	BQC-A-BP15	168702
B (bleed port)	Pink/Black	BQC-B-BP15	168703
C (bleed port)	White/Black	BQC-C-BP15	168704

### 3 - BQ Valves Thermostatic Element Kit\*

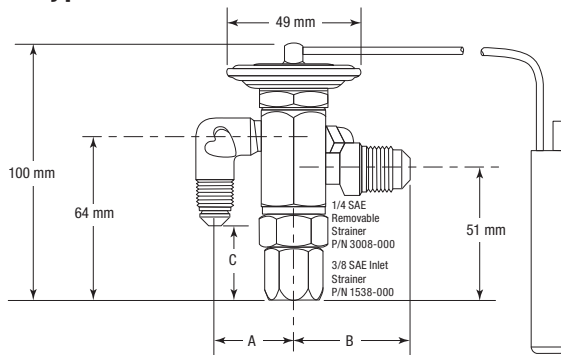
Refrigerant (Code)	Element Kit No.	Capillary Tube Length	Part Number
410A(Z)	KT-45-ZCP180	1500 mm	181213
	KT-45-ZGA		181212
134a, 409A, 401A (J)	KT-43-JC		180310
	KT-43-JCP60		180312
22, 407C, 422D (V)	KT-43-VGA		180276
	KT-43-VCP100		180272
	KT-43-VC		180319
	KT-43-VZ		180323
	KT-43-VZP40		180324
	KT-43-SC		180204
404A, 408 (S)	KT-43-SCP115		180360
	KT-43-SZ		180318
	KT-43-SZP		180060
507(P)	KT-43-PC		180338
	KT-43-PZ		180068
	KT-43-PZP	180072	

\*\* The Kit contain: 1 Thermostatic Element, 2 Bulb Clamps, 2 Bolts and Nuts.

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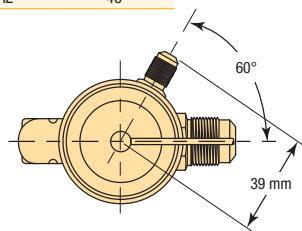
## Valve Dimensions

### Type BQ & BQE

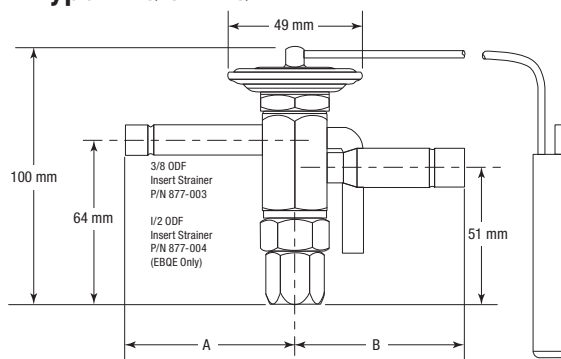


#### Dimensions - Connections

Fitting Size Inches	mm		
	A	B	C
1/4 SAE, 90° Angle	30	-	37
3/8 SAE, 90° Angle	34	-	27
3/8 SAE	-	41	-
1/2 SAE	-	46	-

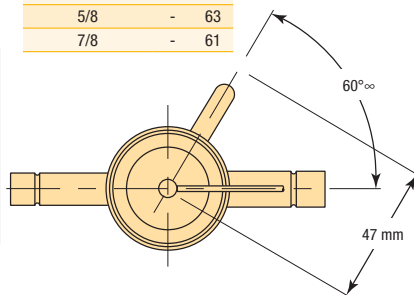


### Type EBQ & EBQE

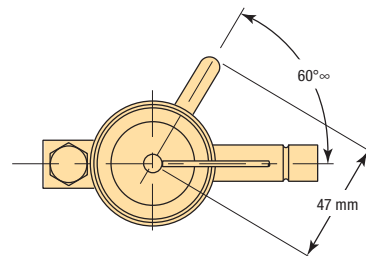
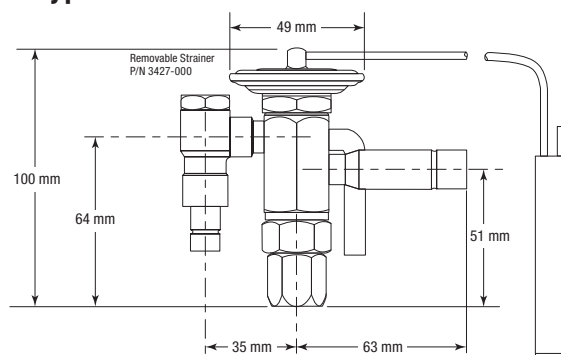


#### Dimensions - Connections

Fitting Size Inches	mm	
	A	B
3/8	64	-
1/2	61	63
5/8	-	63
7/8	-	61



### Type SBQ & SBQE



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## BQ type Thermostatic Expansion Valves Selection Tables

### Air Conditioning, Heat Pump and Commercial Refrigeration Applications

Orifice Size (Color Code)	Nominal Capacity kW	Refrigerant R410A			
		Recommended Thermostatic Charge ZCP180*, ZGA			
		Evaporator Temperature °C			
		10°	5°	-5°	-15°
AAA	1.2	1.44	1.43	1.58	1.42
AA	2.6	3.09	3.06	3.38	3.04
A	5.3	6.59	6.53	7.20	6.49
B	11	11.5	11.40	12.60	11.40
C	18	21.4	21.20	23.40	21.10

\* MOP point CP180 = 15°C

### Liquid Temperature Entering TEV °C

Refrigerant	20°	30°	40°	50°	60°
	Correction Factor, CF				
410a	1.30	1.15	1.00	0.84	0.65

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -15°C to 10°C since the variation in the actual factors across this range is insignificant.

### Pressure Drop Across TEV (bar)

R410A Evaporator Temperature °C	8	11	14	17	20
	Correction Factor, CF				
5° & 10°	0.85	1.00	1.13	1.24	1.35
-5° & -15°	0.76	0.89	1.00	1.10	1.20

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 2.6 kW R-410A BQ valve with a AA cartridge size at -15°C evaporator, 17 bar pressure drop across the TEV and a 30°C liquid temperature entering the TEV = 3.04 (from rating chart) x 1.15 (CF liquid temperature) x 1.10 (CF pressure drop) = 3.85 kW.

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## BQ type Thermostatic Expansion Valves Selection Tables

### Air Conditioning, Heat Pump and Commercial Refrigeration Applications

Cartridge	Nominal Capacity	Refrigerant											
		R422D						407C					
		Recommended Thermostatic Charge						Recommended Thermostatic Charge					
		VC, VCP100, VGA			VZ, VZP40**			VC, VCP100*, VGA			VZ, VZP40**		
kW	Evaporator Temperature °C												
	10°	5°	-5°	-15°	-20°	-30°	-40°	10°	5°	-5°	-15°	-20°	
AAA	1.2	0.74	0.72	0.79	0.69	0.66	0.45	0.34	1.04	1.02	1.14	1.01	0.97
AA	2.3	1.59	1.55	1.7	1.48	1.49	1.14	0.85	2.23	2.19	2.44	2.16	2.19
A	5.3	3.39	3.31	3.62	3.16	2.98	2.04	1.52	4.76	4.68	5.2	4.61	4.4
B	11	5.93	5.79	6.34	5.52	5.31	3.76	2.81	8.33	8.19	9.1	8.08	7.84
C	18	11	10.7	11.8	10.3	9.75	6.75	5.04	15.5	15.2	16.9	15	14.4

\* MOP point CP100 ≈ 14°C

\*\* MOP point ZP40 ≈ -12°C

### Liquid Temperature Entering TEV °C

Refrigerant	-10°	0°	10°	20°	30°	50°	60°
	Correction Factor, CF						
407C	1.73	1.59	1.45	1.3	1.15	0.84	0.67
422D	1.86	1.68	1.5	1.33	1.14	0.77	0.57

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -40°C to 10°C since the variation in the actual factors across this range is insignificant.

### Pressure Drop Across TEV (bar)

407C, 422D Evaporator Temperature °C	2	4	6	8	10	12	14	16
	Correction Factor, CF							
5° & 10°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63
-5° & -15°	0.50	0.71	0.87	1.00	1.12	1.22	1.32	1.41
-20° & -30°	0.45	0.63	0.77	0.89	1.00	1.11	1.18	1.26
-40°	0.41	0.58	0.71	0.82	0.91	1.00	1.08	1.15

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 2.3 kW R-407C BQ valve with a AA cartridge size at -5°C evaporator, 10 bar pressure drop across the TEV and a 30°C liquid temperature entering the TEV = 2.44 (from rating chart) x 1.15 (CF liquid temperature) x 1.12 (CF pressure drop) = 3.14 kW.

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# BQ type Thermostatic Expansion Valves Selection Tables

## Air Conditioning, Heat Pump and Commercial Refrigeration Applications

Cartridge	Nominal Capacity	Refrigerant											
		404A, 507***						408A					
		Recommended Thermostatic Charge											
		SCP115*, SC			SZ, SZP**			SCP115, SC			SZ, SZP		
kW	Evaporator Temperature °C												
	5°	-5°	-15°	-20°	-30°	-40°	5°	-5°	-15°	-20°	-30°	-40°	
AAA	0.7	0.72	0.8	0.75	0.82	0.67	0.58	0.97	1.1	1.06	1.16	0.97	0.86
AA	1.2	1.45	1.59	1.5	1.58	1.24	1.07	1.97	2.2	2.11	2.25	1.8	1.59
A	3.5	3.21	3.59	3.41	3.7	3.03	2.61	4.37	4.96	4.79	5.24	4.39	3.88
B	7	5.95	6.48	5.61	5.69	4.41	3.8	8.11	8.95	7.88	8.07	6.39	5.65
C	11	9	9.81	8.49	8.65	6.75	5.82	12.3	13.6	11.9	12.3	9.78	8.65

\* MOP point CP115 ≈ 10°C

\*\* MOP point ZP ≈ -17°C

\*\*\* R507 capacities are almost identical with the R404A capacities

## Liquid Temperature Entering TEV °C

Refrigerant	-10°	0°	10°	20°	30°	40°	50°	60°
	Correction Factor, CF							
404A	1.89	1.72	1.56	1.37	1.19	1	0.79	0.56
507	1.92	1.74	1.56	1.37	1.19	1	0.79	0.54
408A	1.58	1.46	1.34	1.22	1.1	0.97	0.85	0.71

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -40°C to 5°C since the variation in the actual factors across this range is insignificant.

## Pressure Drop Across TEV (bar)

Evaporator Temperature °C	2	4	6	8	10	12	14	16
	Correction Factor, CF							
5°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63
-5° & -15°	0.50	0.71	0.87	1.00	1.12	1.22	1.32	1.41
-20° & -30°	0.45	0.63	0.77	0.89	1.00	1.10	1.18	1.26
-40°	0.41	0.58	0.71	0.82	0.91	1.00	1.08	1.15

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 1.2 kW R-404A BQ valve with a AA cartridge size at -5°C evaporator, 10 bar pressure drop across the TEV, and a 30°C liquid temperature entering the TEV = 1.59 (from rating chart) x 1.19 (CF liquid temperature) x 1.12 (CF pressure drop) = 2.12 kW.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [raccustomerservice@parker.com](mailto:raccustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)

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## BQ type Thermostatic Expansion Valves Selection Tables

### Air Conditioning, Heat Pump and Commercial Refrigeration Applications

Cartridge	Nominal Capacity	Refrigerant											
		134a				409A				401A			
		JC, JCP60*				Recommended Thermostatic Charge FC, FCP60				FC, FCP60			
		Evaporator Temperature °C											
kW	10°	5°	-5°	-15°	-30°	5°	-5°	-15°	10°	5°	-5°	-15°	
AAA	0.7	0.87	0.85	0.99	0.95	0.67	0.85	1	0.97	0.93	0.91	1.08	1.03
AA	1.2	1.96	1.84	1.97	1.8	1.24	1.85	1.99	1.83	2.1	1.98	2.13	1.96
A	3.5	4.35	4.08	4.37	4	3.03	4.11	4.42	4.07	4.67	4.39	4.73	4.38
B	7	7.4	6.94	7.42	6.8	4.41	6.99	7.51	6.92	7.93	7.47	8.04	7.44
C	11	13.1	12.3	13.1	12	6.75	12.3	13.3	12.2	14	13.2	14.2	13.2

\* MOP point CP60 ≈ 12°C

### Liquid Temperature Entering TEV °C

Refrigerant	-10°	0°	10°	20°	30°	40°	50°	60°
Correction Factor, CF								
134a	1.64	1.52	1.39	1.26	1.13	1.00	0.87	0.73
409A	1.51	1.41	1.31	1.21	1.11	1.00	0.89	0.78
401A	1.52	1.42	1.31	1.2	1.09	0.98	0.86	0.74

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of -15°C. However, they may be used for any evaporator temperature from -15°C to 10°C since the variation in the actual factors across this range is insignificant.

### Pressure Drop Across TEV (bar)

Evaporator Temperature °C	2	4	6	8	10	12	14	16
Correction Factor, CF								
5° & 10°	0.71	1.00	1.22	1.41	1.58	1.73	1.87	2.00
-5° & -15°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop

**Example:** Actual capacity of a nominal 1.2 kW R-134a BQ valve with a AA cartridge size at -5°C evaporator, 8 bar pressure drop across the TEV, and a 30°C liquid temperature entering the TEV = 1.97 (from rating chart) x 1.13 (CF liquid temperature) x 1.15 (CF pressure drop) = 2.56 kW.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



# Parts and Component Assembly

## BQ Miscellaneous

Miscellaneous Parts		Part Number
BQ Cartridge Service Kit (Empty)	BCSK-1	184010
(2) AAA, (4) AA, (4) A, (3) B, and (2) C Cartridges and Tags, Oil Bottle (with oil), BQ Cartridge Tool	BQ Cartridge Service Kit	184007
BQ Cartridge O-Ring	4508-010*	958147
Oil Bottle	OB-1	184001
4 mm Allen Wrench	AW-1	184002
BQ Cartridge Tool	4444-000	184008
KT-43 Element Wrench	180390	180390
BQ Valve Assembly Tool - Deep Well Socket	QVT-1	184005
Bench Flange	QVT-F	184006

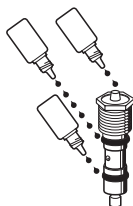
\* Cartridge requires 2 O-rings

## Component Assembly

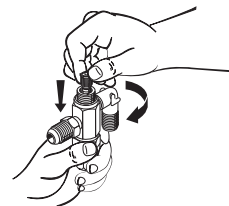
4



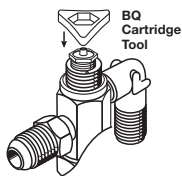
**1** Attach cartridge identification tag to element capillary tube.



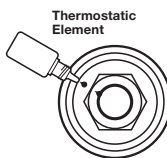
**2** (Oil) Lubricate pushrods and O-rings.



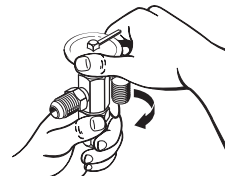
**3** Turn clockwise while applying downward force.



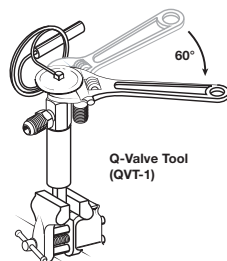
**4** Turn clockwise until seated (do not over tighten).



**5** (Oil) Lubricate locking surface.

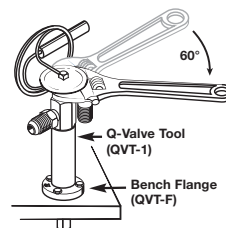


**6** Hand tighten element.



**7** After hand tight, turn element clock wise 60° (or movement equal to one hex flat).

View of Element



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# Type J8

Exchangeable Cartridge Thermostatic Expansion Valves



## Specifications & Materials/Details of Construction

<b>Body</b>	Machined Forged Brass
<b>Seat</b>	Stainless Steel
<b>Pin</b>	Stainless Steel
<b>Pushrod</b>	Stainless Steel
<b>Connections</b>	SAE Flare, ODF Copper Fittings Silver Soldered to Body
<b>Inlet Strainer</b>	Filter Assembly with Cartridge
<b>Operating Temp. Range</b>	-40°C to 15°C
<b>MRP</b>	34.0 bar (500 psig)
<b>Maximum Temperature</b>	121°C, short-lived peak 149°C
<b>Max Ambient Temp.</b>	60°C
<b>Max Bulb Temp.</b>	100°C
<b>Max External Leakage</b>	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)
<b>Compatibility</b>	All HFC, HCFC, Refrigerants and blends

### Certification:

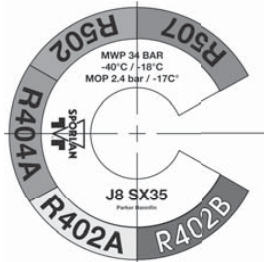
The Type J8 Thermostatic Expansion Valves comply with the Directive(s) 97-23-EC

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on:  
[racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## J8 Valve identification

The main information about the valve is provided on the element label:



- Element assembly type J8 SX35
- Refrigerant
- Maximum Working Pressure (MWP) = 34 bar
- Evaporating temperature range in °C = -40°C/-18°C
- Maximum Operating Pressure (MOP) point in bar & °C = MOP 2.4 barg/-17°C
- Manufacturing Date Code

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

### Recommended Thermostatic Charges

Application	Refrigerant		
	134a	404A	407C
Air Conditioning	JX60	-	-
	-	-	NX100
	-	SX110	-
Refrigeration	JW	-	-
	-	-	NW
	-	SX35	-
	-	SW	-

4

### Benefits

- Selective thermostatic charges provide optimum performance for all common applications air conditioning, medium and low temp. refrigeration
- Stainless steel thermostatic element
- Externally adjustable
- The copper bulb design provides an excellent heat transfer
- Thermostatic charges with or without MOP (Maximum Operating Pressure)
- 8 Replaceable orifice assemblies
- Evaporating temperature range from -40°C to +15°C
- Solder ODF (with inlet connector) or Flare SAE fittings

### Options

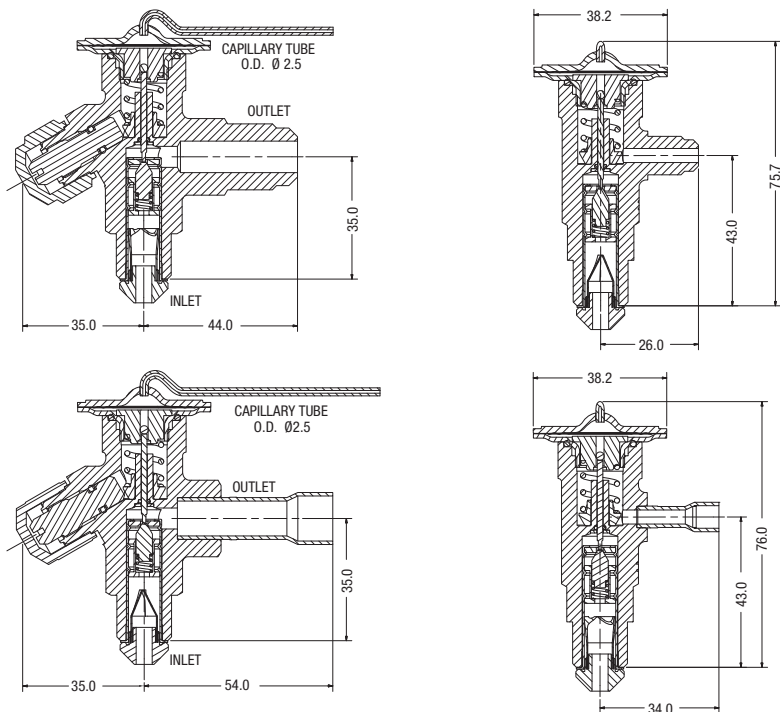
- External or internal equalizer
- Inlet ODF adaptor

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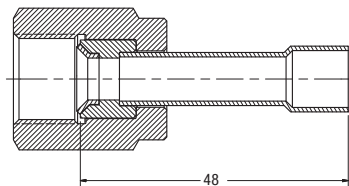
## J8 Valve Dimension



## Inlet ODF Adaptor

All J8 Thermostatic Expansion Valves feature 3/8"SAE inlet fitting. Solder inlet adaptors are available from Parker Sporlan distributors. Solder adaptors allow the installation of the J8 TEV and easy access of cartridge orifice & filter assembly. Parker Sporlan J8 Adaptors have been designed to be used with flare orifice filter.

Item	Description
A-6M	J8 Inlet Adaptor 3/8" SAE to 6 mm ODF
A-10M	J8 Inlet Adaptor 3/8" SAE to 10 mm ODF
A-2	J8 Inlet Adaptor 3/8" SAE to 1/4" ODF
A-3	J8 Inlet Adaptor 3/8" SAE to 3/8" ODF



The inlet ODF adaptor can be also use for the BQ Type Valve with 3/8" flare inlet connections.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)

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## J8 Valve

### Rated Capacity in kW\*

Part Number	Cartridge Type	R407C	R134a	R404A, R507
506032-000	C-0X	0.55	0.44	0.42
506033-000	C-00	1.2	1.0	0.77
506034-000	C-01	2.4	1.6	1.4
506035-000	C-02	3.8	2.6	2.1
506036-000	C-03	5.32	4.3	3.9
506037-000	C-04	9.0	7.0	6.3
506038-000	C-05	11.3	8.6	7.7
506039-000	C-06	15.0	9.5	8.2

\* The rated capacity is based on the following conditions:

Evaporating temperature,  $T_e = +5^\circ\text{C}$ .

Condensing temperature,  $T_c = +32^\circ\text{C}$

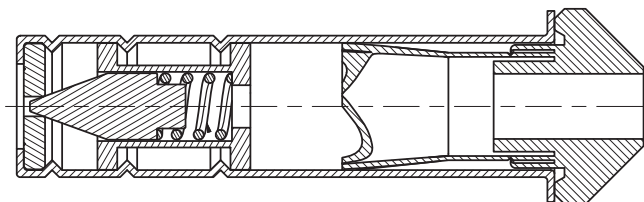
Refrigerant temperature ahead of valve,  $T_1 = +28^\circ\text{C}$

## Cartridge & Filter Assembly

4

### Cartridge Orifice

The cartridge orifice is stamped with the orifice size, **ex. C-0X**



### Metallic Tag

A metallic tag is provided with each individual cartridge and should be fixed on the cap tube as the orifice is installed in the valves body.



All J8 cartridges are supplied with conical filters.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)

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## J8 Selection Tables

### R407C

Capacity Tables (kW)

#### Pressure Drop Across the Valve (bar)

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporator Temperature +10°C							
C-0X	0.44	0.55	0.62	0.67	0.69	0.70	0.69	0.70
C-00	1.0	1.2	1.3	1.4	1.5	1.5	1.5	1.5
C-01	2.1	2.6	3.0	3.1	3.2	3.2	3.3	3.2
C-02	3.1	4.1	4.8	5.2	5.4	5.5	5.6	5.6
C-03	5.2	6.9	8.0	8.6	9.1	9.2	9.3	9.3
C-04	8.8	11.6	13.4	14.6	15.2	15.4	15.6	15.6
C-05	10.6	14.0	16.0	17.4	18.3	18.5	18.7	18.7
C-06	11.8	15.5	17.7	19.1	20.1	20.3	20.5	20.5

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporator Temperature 0°C							
C-0X	0.44	0.55	0.62	0.66	0.69	0.70	0.70	0.69
C-00	0.96	1.1	1.3	1.4	1.4	1.5	1.5	1.4
C-01	1.8	2.3	2.5	2.7	2.8	2.8	2.9	2.9
C-02	2.7	3.5	4.1	4.3	4.6	4.7	4.8	4.8
C-03	4.5	5.9	6.7	7.4	7.7	7.8	7.9	7.9
C-04	7.5	9.9	11.2	12.2	12.8	13.0	13.2	13.3
C-05	9.2	11.9	13.6	14.7	15.5	15.8	15.9	15.9
C-06	10.1	13.1	14.9	16.2	17.0	17.3	17.5	17.5

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporator Temperature -10°C							
C-0X	0.42	0.53	0.59	0.63	0.66	0.68	0.68	0.67
C-00	0.90	1.1	1.2	1.3	1.3	1.4	1.4	1.3
C-01	1.5	1.8	2.1	2.3	2.3	2.3	2.4	2.4
C-02	2.3	3.0	3.3	3.6	3.8	3.9	4.0	3.9
C-03	3.8	4.9	5.6	6.0	6.4	6.6	6.7	6.5
C-04	6.3	8.2	9.2	10.0	10.6	10.8	11.0	10.9
C-05	7.7	9.8	11.1	12.0	12.8	13.0	13.2	13.1
C-06	8.6	10.8	12.2	13.2	14.0	14.3	14.5	14.4

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporator Temperature -20°C							
C-0X	-	0.50	0.56	0.59	0.62	0.63	0.65	0.63
C-00	-	1.0	1.1	1.2	1.2	1.3	1.3	1.2
C-01	-	1.5	1.7	1.8	2.0	2.0	2.0	2.0
C-02	-	2.4	2.7	2.9	3.1	3.1	3.2	3.1
C-03	-	4.0	4.5	4.9	5.1	5.2	5.3	5.2
C-04	-	6.6	7.5	8.1	8.5	8.6	8.8	8.7
C-05	-	8.1	9.1	9.8	10.2	10.5	10.6	10.5
C-06	-	8.8	10.0	10.7	11.3	11.4	11.7	11.6

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporating Temperature -30°C							
C-0X	-	0.45	0.50	0.54	0.56	0.58	0.58	0.58
C-00	-	0.89	1.0	1.1	1.1	1.2	1.1	1.1
C-01	-	1.3	1.4	1.5	1.6	1.5	1.6	1.6
C-02	-	2.0	2.2	2.7	2.5	2.5	2.5	2.5
C-03	-	3.6	3.7	3.9	4.0	4.1	4.2	4.2
C-04	-	4.4	6.1	6.4	6.7	6.8	7.0	6.9
C-05	-	5.8	7.3	7.7	8.1	8.3	8.4	8.4
C-06	-	7.0	8.0	8.6	8.9	9.1	9.3	9.2

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporating Temperature -40°C							
C-0X	-	-	0.46	0.48	0.51	0.53	0.53	0.54
C-00	-	-	0.88	0.92	1.0	1.0	1.0	1.0
C-01	-	-	1.2	1.3	1.2	1.3	1.3	1.4
C-02	-	-	1.7	1.9	1.9	1.9	2.0	1.9
C-03	-	-	2.9	3.1	3.2	3.3	3.3	3.3
C-04	-	-	4.8	5.0	5.2	5.3	5.4	5.4
C-05	-	-	5.8	6.2	6.3	6.6	6.6	6.6
C-06	-	-	6.4	6.8	7.0	7.2	7.3	7.3

#### Correction Factor, (CF) Liquid Temperature

TEV corrected capacity = Required Evaporator Capacity / Correction Factor, (CF), for Subcooling.

Subcooling	4K	10K	15K	20K	25K	30K	35K	40K	45K	50K
Correction Factor	1.00	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57

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## J8 Selection Tables

### R134a / R401A

Capacity Tables (kW)

#### Pressure Drop Across the Valve (bar)

Orifice Number	Pressure Drop Across the valve in bar				
	2	4	6	8	10
C-0X	0.37	0.47	0.52	0.55	0.56
C-00	0.78	0.95	1.0	1.1	1.1
C-01	1.4	1.7	1.9	2.0	2.0
C-02	2.0	2.6	3.0	3.1	3.2
C-03	3.4	4.4	5.0	5.2	5.4
C-04	5.7	7.3	8.2	8.7	9.0
C-05	6.9	8.9	9.9	10.8	10.9
C-06	7.6	9.7	10.9	11.5	11.9

Orifice Number	Pressure Drop Across the valve in bar				
	2	4	6	8	10
C-0X	0.36	0.46	0.51	0.52	0.54
C-00	0.72	0.86	0.95	1.0	1.0
C-01	1.2	1.4	1.5	1.6	1.6
C-02	1.7	2.2	2.4	2.6	2.6
C-03	2.8	3.7	4.1	4.3	4.4
C-04	4.7	6.0	6.7	7.1	7.3
C-05	5.7	7.3	8.1	8.6	8.8
C-06	6.3	8.0	9.0	9.5	9.7

Orifice Number	Pressure Drop Across the valve in bar				
	2	4	6	8	10
C-0X	0.33	0.42	0.47	0.48	0.48
C-00	0.65	0.77	0.85	0.89	0.90
C-01	0.90	1.2	1.3	1.4	1.4
C-02	1.4	1.8	2.0	2.1	2.1
C-03	2.3	2.9	3.3	3.5	3.6
C-04	3.8	4.8	5.3	5.7	5.9
C-05	4.6	5.8	6.5	6.9	7.1
C-06	5.1	6.4	7.2	7.6	7.7

Orifice Number	Pressure Drop Across the valve in bar				
	2	4	6	8	10
C-0X	0.31	0.39	0.43	0.45	0.46
C-00	0.58	0.68	0.76	0.79	0.80
C-01	0.73	0.90	1.0	1.1	1.1
C-02	1.1	1.4	1.5	1.6	1.7
C-03	1.9	2.3	2.6	2.7	2.8
C-04	3.0	3.8	4.2	4.5	4.6
C-05	3.7	4.6	5.1	5.4	5.5
C-06	4.1	5.0	5.6	5.9	6.1

Orifice Number	Pressure Drop Across the valve in bar				
	2	4	6	8	10
C-0X	0.28	0.35	0.39	0.41	0.42
C-00	0.53	0.61	0.67	0.70	0.70
C-01	0.59	0.72	0.79	0.84	0.86
C-02	0.90	1.1	1.2	1.3	1.3
C-03	1.5	1.9	2.1	2.2	2.2
C-04	2.4	3.0	3.4	3.5	3.6
C-05	3.0	3.6	4.0	4.2	4.3
C-06	3.2	4.0	4.4	4.7	4.8

Orifice Number	Pressure Drop Across the valve in bar				
	2	4	6	8	10
C-0X	0.25	0.31	0.35	0.36	0.37
C-00	0.48	0.55	0.59	0.62	0.63
C-01	0.49	0.59	0.65	0.68	0.69
C-02	0.74	0.89	1.0	1.0	1.0
C-03	1.2	1.5	1.7	1.8	1.8
C-04	2.0	2.4	2.7	2.8	2.8
C-05	2.4	2.9	3.2	3.54	3.5
C-06	2.7	3.2	3.6	3.8	3.9



#### Correction Factor, (CF) Liquid Temperature

TEV corrected capacity = Required Evaporator Capacity / Correction Factor, (CF), for Subcooling.

Subcooling	4K	10K	15K	20K	25K	30K	35K	40K	45K	50K
Correction Factor	1.00	1.08	1.13	1.19	1.25	1.31	1.37	1.42	1.48	1.54

Accurate at the time of going to print.



## J8 Selection Tables

### R404A / R507

Capacity Tables (kW)

#### Pressure Drop Across the Valve (bar)

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporator Temperature +10°C							
C-0X	0.31	0.39	0.44	0.46	0.47	0.47	0.46	0.45
C-00	0.74	0.90	1.0	1.0	1.1	1.1	1.0	1.0
C-01	1.5	1.9	2.1	2.2	2.3	2.3	2.2	2.1
C-02	2.3	3.0	3.4	3.6	3.7	3.7	3.7	3.6
C-03	3.9	5.1	5.6	6.0	6.2	6.3	6.2	6.0
C-04	6.5	8.5	9.5	10.2	10.5	10.5	10.3	10.1
C-05	7.9	10.2	11.4	12.2	12.5	12.6	12.3	12.0
C-06	8.7	11.3	12.6	13.4	13.8	13.8	13.6	13.2

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporator Temperature 0°C							
C-0X	0.33	0.41	0.45	0.46	0.47	0.47	0.47	0.45
C-00	0.75	0.88	1.0	1.0	1.0	1.0	1.0	1.0
C-01	1.4	1.7	1.8	1.9	2.0	2.0	2.0	1.9
C-02	2.1	2.6	3.0	3.1	3.2	3.3	3.2	3.1
C-03	3.5	4.4	5.0	5.2	5.4	5.4	5.3	5.2
C-04	5.8	7.4	8.3	8.7	9.0	9.0	8.9	8.7
C-05	7.0	8.9	10.0	10.5	10.8	10.9	10.8	10.4
C-06	7.7	9.8	11.0	11.6	11.9	12.0	11.8	11.4

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporator Temperature -10°C							
C-0X	0.33	0.41	0.44	0.46	0.46	0.46	0.45	0.45
C-00	0.72	0.84	0.90	0.92	1.0	1.0	0.94	0.91
C-01	1.2	1.4	1.5	1.6	1.6	1.7	1.6	1.6
C-02	1.8	2.2	2.5	2.6	2.7	2.7	2.7	2.6
C-03	2.9	3.7	4.2	4.4	4.5	4.5	4.5	4.4
C-04	4.9	6.3	6.9	7.3	7.4	7.5	7.4	7.2
C-05	5.9	7.6	8.4	8.8	9.0	9.1	9.0	8.7
C-06	6.6	8.4	9.3	9.7	9.9	10.0	9.9	9.6

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporator Temperature -20°C							
C-0X	-	0.39	0.42	0.44	0.43	0.44	0.43	0.42
C-00	-	0.77	0.83	0.85	0.87	0.87	0.87	0.84
C-01	-	1.2	1.4	1.4	1.4	1.4	1.4	1.4
C-02	-	1.9	2.0	2.1	2.2	2.2	2.2	2.1
C-03	-	3.1	3.5	3.6	3.7	3.7	3.7	3.6
C-04	-	5.1	5.7	5.9	6.1	6.1	6.0	5.9
C-05	-	6.2	6.9	7.2	7.3	7.3	7.2	7.1
C-06	-	6.8	7.6	7.9	8.0	8.0	7.9	7.7

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporating Temperature -30°C							
C-0X	-	-	0.39	0.41	0.40	0.41	0.40	0.39
C-00	-	-	0.74	0.77	0.77	0.77	0.76	0.74
C-01	-	-	1.1	1.1	1.1	1.1	1.1	1.1
C-02	-	-	1.6	1.7	1.7	1.7	1.7	1.6
C-03	-	-	2.7	2.8	2.9	2.9	2.8	2.7
C-04	-	-	4.5	4.7	4.7	4.07	4.7	4.6
C-05	-	-	5.5	5.7	5.7	5.7	5.7	5.5
C-06	-	-	6.0	6.2	6.3	6.3	6.2	6.1

Orifice Number	Pressure Drop Across the valve in bar							
	2	4	6	8	10	12	14	16
	Evaporating Temperature -40°C							
C-0X	-	-	0.35	0.36	0.36	0.36	0.35	0.35
C-00	-	-	0.66	0.67	0.68	0.67	0.66	0.65
C-01	-	-	0.83	0.86	0.87	0.86	0.85	0.82
C-02	-	-	1.3	1.3	1.3	1.3	1.3	1.2
C-03	-	-	2.2	2.2	2.2	2.2	2.2	2.1
C-04	-	-	3.5	3.7	3.7	3.7	3.6	3.5
C-05	-	-	4.3	4.4	4.5	4.4	4.4	4.2
C-06	-	-	4.7	4.9	5.0	4.9	4.8	4.7

#### Correction Factor, (CF) Liquid Temperature

TEV corrected capacity = Required Evaporator Capacity / Correction Factor, (CF), for Subcooling.

Subcooling	4K	10K	15K	20K	25K	30K	35K	40K	45K	50K
Correction Factor	1	1.10	1.20	1.29	1.37	1.46	1.54	1.63	1.70	1.78

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## J8 Order Selection Guide

### J8 Body

Refrigerant	Connection Size			MOP bar / °C	Valve Type	Part Number	Capillary Tube Length mm	Evaporator Temperature Range °C
	Inlet	Outlet	Equalizer					
R407C	3/8" SAE	1/2" SAE	1/4" SAE	-	J8EF-NW	600002-000	1500	-40°C to +15°C
			6.9 bar / +17°C	J8EF-NX100	600003-000			
			Internally Equalized	-	J8F-NW	600023-000		
		6.9 bar / +17°C	J8F-NX100	600024-000				
		12 mm ODF	6 mm ODF	-	J8EM-NW	600009-000		
			6.9 bar / +17°C	J8EM-NX100	600010-000			
	Internally Equalized		-	J8M-NW	600030-000			
	6.9 bar / +17°C	J8M-NX100	600031-000					
	1/2" ODF	1/4" ODF	-	J8ES-NW	600016-000			
		6.9 bar / +17°C	J8ES-NX100	600017-000				
		Internally Equalized	-	J8S-NW	600037-000			
	6.9 bar / +17°C	J8S-NX100	600038-000					
R134a R401A	3/8" SAE	1/2" SAE	1/4" SAE	-	J8EF-JW	600000-000	1500	-40°C to +15°C
			4.1 bar / +17°C	J8EF-JX60	600001-000			
			Internally Equalized	-	J8F-JW	600021-000		
		4.1 bar / +17°C	J8F-JX60	600022-000				
		12 mm ODF	6 mm ODF	-	J8EM-JW	600007-000		
			4.1 bar / +17°C	J8EM-JX60	600008-000			
	Internally Equalized		-	J8M-JW	600028-000			
	4.1 bar / +17°C	J8M-JX60	600029-000					
	1/2" ODF	1/4" ODF	-	J8ES-JW	600014-000			
		4.1 bar / +17°C	J8ES-JX60	600015-000				
		Internally Equalized	-	J8S-JW	600035-000			
	4.1 bar / +17°C	J8S-JX60	600036-000					
R404A R402A R402B R507	3/8" SAE	1/2" SAE	1/4" SAE	-	J8EF-SW	600004-000	1500	-40°C to +10°C
				7.6 bar / +12°C	J8EF-SX110	600005-000		-40°C to -18°C
				2.4 bar / -17°C	J8EF-SX35	600006-000		-40°C to +10°C
			Internally Equalized	-	J8F-SW	600025-000		-40°C to +10°C
			7.6 bar / +12°C	J8F-SX110	600026-000	-40°C to -18°C		
			2.4 bar / -17°C	J8F-SX35	600027-000	-40°C to +10°C		
	12 mm ODF	6 mm ODF	-	J8EM-SW	600011-000	-40°C to +10°C		
			7.6 bar / +12°C	J8EM-SX110	600012-000	-40°C to -18°C		
			2.4 bar / -17°C	J8EM-SX35	600013-000	-40°C to +10°C		
		Internally Equalized	-	J8M-SW	600032-000	-40°C to +10°C		
		7.6 bar / +12°C	J8M-SX110	600033-000	-40°C to -18°C			
		2.4 bar / -17°C	J8M-SX35	600034-000	-40°C to +10°C			
	1/2" ODF	1/4" ODF	-	J8ES-SW	600018-000	-40°C to +10°C		
			7.6 bar / +12°C	J8ES-SX110	600019-000	-40°C to -18°C		
			2.4 bar / -17°C	J8ES-SX35	600020-000	-40°C to +10°C		
		Internally Equalized	-	J8S-SW	600039-000	-40°C to +10°C		
		7.6 bar / +12°C	J8S-SX110	600040-000	-40°C to -18°C			
		2.4 bar / -17°C	J8S-SX35	600041-000	-40°C to +10°C			

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## J8 Order Selection Guide

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### J8 Cartridge

Orifice Number	Part Number
C-0X	506032-000
C-00	506033-000
C-01	506034-000
C-02	506035-000
C-03	506036-000
C-04	506037-000
C-05	506038-000
C-06	506039-000

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## 2-Way Solenoid Valves

Parker Sporlan offers a complete line of Solenoid Valves to the HVAC-R market available in many different capacities & connection sizes.



ENGINEERING YOUR SUCCESS.

## 2-Way Refrigeration Solenoid Valves

The primary purpose of a **Solenoid Valve** is to control the flow of fluids, liquid or gas. Parker Sporlan **Solenoid Valves** may be applied on a wide variety of air conditioning and refrigeration applications: liquid line, suction line, hot gas, etc.

The **Solenoid Valve** operation is based on the theory of the electromagnet. The solenoid coil sets up a magnetic field when electrical current is flowing through it. If magnetic metal is introduced into the magnetic field, the pull of the field will raise the metal and center it in the hollow core of the coil. This principle is used to open the port of the valve by attaching a stem to the magnetic metal or plunger.

In a directly operated **Solenoid Valve** the stem and plunger assembly opens the port of the valve directly.

In a pilot operated valve, the stem and plunger assembly opens a pilot port. This releases the pressure on the top of the disc which then moves upward and opens the main valve port. When the electrical circuit to the coil is broken, the magnetic field will collapse and the stem and plunger will either fall by gravity or be pushed down by the kick off spring.

System cleanliness is essential for good operation of a solenoid valve. Therefore we recommend the installation of Parker Sporlan Catch-All® or World Series Filter Driers to protect the **Solenoid Valve** from dirt.

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## 6 strengths of Parker Sporlan Brand

- **EXPERIENCE**

For more than 70 years Parker Sporlan has provided sound engineering principles and craftsmanship to produce top quality solenoid valves for the air conditioning and refrigeration industry.

- **CONTINUING RESEARCH**

Through continuing research we have produced constant product improvements and innovating design, including synthetic coated metal gasket, synthetic seat, ruby seat, floating disc construction and many more...

- **PEAK PERFORMANCE**

To assure peak performance we use thoroughly proven materials resulting in lasting valve seat tightness.

- **TOP QUALITY**

Testing is performed during all phases of production followed by 100% testing for body and seat tightness, electrical characteristics and valves operation.

- **UNSURPASSED RELIABILITY**

A combination of top quality materials used in both the internal and external construction ensures unsurpassed product reliability. This is verified by periodic accelerated life testing.

- **COMPLETE LINE**

Parker Sporlan offers a complete line of solenoid valves to the industry. They are available in many different capacities and connection sizes.



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# V Series

## Diaphragm Operated Refrigeration Solenoid Valves

**V Series Solenoid Valves** are light design, diaphragm operated solenoid valves mainly used in liquid line or suction line applications.

They are available in both metric and inches connections.

The best and innovative materials, like industrial ruby and stainless steel, used in the construction of these valves allow achieving excellent seat tightness, cycle life and reliability.

### Technical Specification

**Compatibility:** CFC, HCFC and HFC refrigerants and blends & most refrigeration oils

**MWP:** 35 barg

**Temperature range:** -40°C to +105°C

#### Direct Acting - Inches

Valve Type / Part Number	Connections SAE or ODF	Port Size Ø	Flow Coefficient Kv	Minimum Pressure Differential	Maximum Pressure Differential M.O.P.D.		Coil Type	
					A.C. (-)	D.C. (=)	A.C.	D.C.
	Inches	mm	m <sup>3</sup> / h	bar	bar	bar		
V3F2	1/4" SAE	2.5	0.185	0	30	21	RT14-YB14	CD21
V4F2	1/4" SAE	3	0.270	0	30	21	RT14-YB14	CD21
V4F3	3/8" SAE	3	0.270	0	30	21	RT14-YB14	CD21
V3S2	1/4"ODF	2.5	0.185	0	30	21	RT14-YB14	CD21
V4S2	1/4"ODF	3	0.27	0	30	21	RT14-YB14	CD21
V4S3	3/8"ODF	3	0.27	0	30	21	RT14-YB14	CD21

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#### Direct Acting - mm

Valve Type / Part Number	Connections SAE or ODF	Port Size Ø	Flow Coefficient Kv	Minimum Pressure Differential	Maximum Pressure Differential M.O.P.D.		Coil Type	
					A.C. (-)	D.C. (=)	A.C.	D.C.
		mm	m <sup>3</sup> / h	bar	bar	bar		
V3SM6	6mm ODF	2.5	0.185	0	30	21	RT14-YB14	CD21
V4SM6	6mm ODF	3	0.270	0	30	21	RT14-YB14	CD21

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

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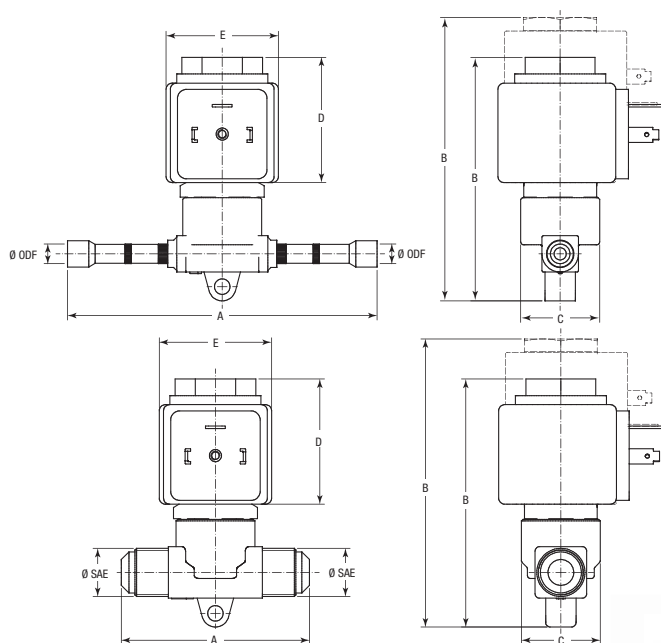
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## Dimensions in mm

### V3 & V4

Connections	A mm	B mm		C mm	D mm		E mm
		AC Coil	DC Coil		AC Coil	DC Coil	
1/4" SAE	61	79.8	93.5	26	41.3	55	37
1/4" SAE	61	79.8	93.5	26	41.3	55	37
3/8" SAE	62	79.8	93.5	26	41.3	55	37
6 mm - 1/4" ODF	102	79.8	93.5	26	41.3	55	37
6 mm - 1/4" ODF	102	79.8	93.5	26	41.3	55	37
3/8" ODF	101	79.8	93.5	26	41.3	26	26



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## Technical Specification

**Compatibility:** CFC, HCFC and HFC refrigerants and blends & most refrigeration oils

**MWP:** 35 barg

**Temperature range:** -40°C to +105°C

### Pilot Operated - Inches

Valve Type / Part Number	Connections SAE or ODF	Port Size Ø	Flow Coefficient Kv	Minimum Pressure Differential	Maximum Pressure Differential M.O.P.D.		Coil Type	
					A.C. (-)	D.C. (=)	A.C.	D.C.
	Inches	mm	m <sup>3</sup> / h	bar	bar	bar		
V8F3	3/8" SAE	6.5	0.800	0.1	30	21	RT14-YB14	CD21
V10F3	3/8" SAE	8	1.4	0.1	30	21	RT14-YB14	CD21
V13F4	1/2" SAE	10	1.88	0.1	30	21	RT14-YB14	CD21
V19F5	5/8" SAE	15	3.3	0.1	30	10	RT14-YB14	CD21
V8S3	3/8" ODF	6.5	0.800	0.1	30	21	RT14-YB14	CD21
V8S4	1/2" ODF	6.5	0.800	0.1	30	21	RT14-YB14	CD21
V10S3	3/8" ODF	8	1.4	0.1	30	21	RT14-YB14	CD21
V13S4	1/2" ODF	10	1.88	0.1	30	21	RT14-YB14	CD21
V19S5	5/8" ODF	15	3.3	0.1	30	10	RT14-YB14	CD21
V23S6	3/4" ODF	18	3.85	0.1	30	10	RT14-YB14	CD21
V23S7	7/8" ODF	18	4.32	0.1	30	10	RT14-YB14	CD21
V23S9	1-1/8" ODF	18	4.32	0.1	30	10	RT14-YB14	CD21

### Pilot Operated - mm

Valve Type / Part Number	Connections ODF	Port Size Ø	Flow Coefficient Kv	Minimum Pressure Differential	Maximum Pressure Differential M.O.P.D.		Coil Type	
					A.C. (-)	D.C. (=)	A.C.	D.C.
		mm	m <sup>3</sup> / h	bar	bar	bar		
V8SM10	10 mm ODF	6.5	0.800	0.1	30	21	RT14-YB14	CD21
V8SM12	12 mm ODF	6.5	0.800	0.1	30	21	RT14-YB14	CD21
V10SM10	10 mm ODF	8	1.4	0.1	30	21	RT14-YB14	CD21
V13SM12	12 mm ODF	10	1.88	0.1	30	21	RT14-YB14	CD21
V19SM16	16 mm ODF	15	3.3	0.1	30	10	RT14-YB14	CD21
V23SM18	18 mm ODF	18	3.85	0.1	30	10	RT14-YB14	CD21
V23SM22	22 mm ODF	18	4.32	0.1	30	10	RT14-YB14	CD21
V23SM28	28 mm ODF	18	4.32	0.1	30	10	RT14-YB14	CD21

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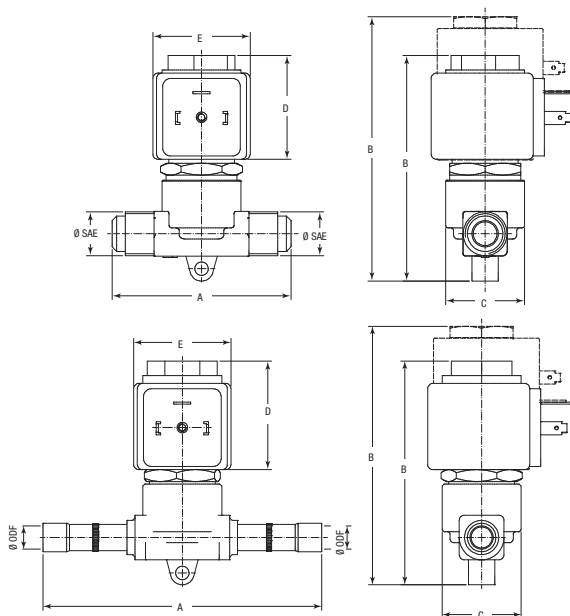
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## Dimensions in mm

### V8

Connections	A mm	B mm		C mm	D mm		E mm
		AC Coil	DC Coil		AC Coil	DC Coil	
3/8" SAE	68	85.8	99.5	30	41.3	55	37
10 mm ODF	106	85.8	99.5	30	41.3	55	37
3/8" ODF	106	85.8	99.5	30	41.3	55	37
1/2" ODF	123	85.8	99.5	30	41.3	55	37
12 mm ODF	123	85.8	99.5	30	41.3	55	37



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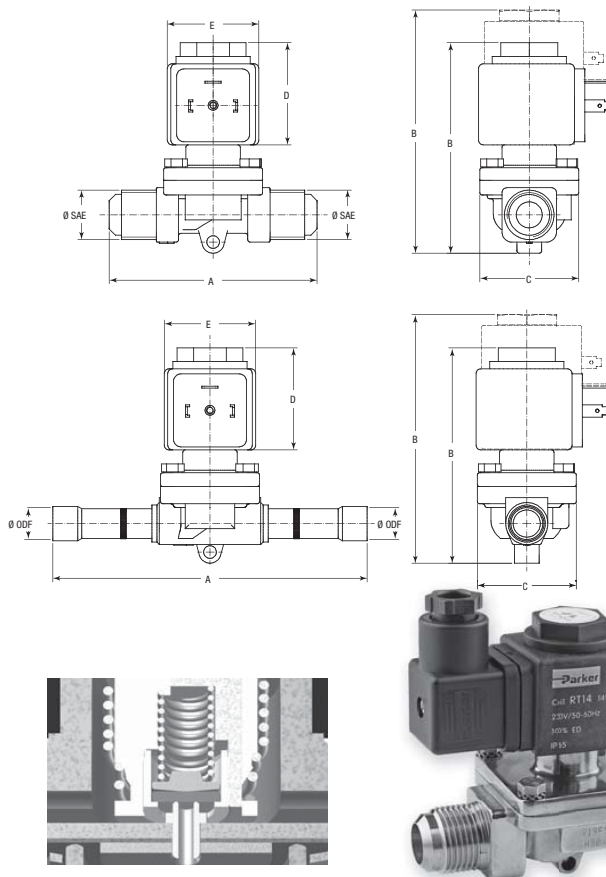
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## Dimensions in mm

### V10 - V13 - V19 - V23

Connections	A mm	B mm		C mm	D mm		E mm
		AC Coil	DC Coil		AC Coil	DC Coil	
3/8" SAE	80	85.3	99	40	41.3	55	37
1/2" SAE	84	85.3	99	40	41.3	55	37
5/8" SAE	104	85.3	103.5	51	41.3	55	37
10 mm - 3/8" ODF	111	79.3	193	40	41.3	55	37
12 mm - 1/2" ODF	127	79.3	93	40	41.3	55	37
16 mm - 5/8" ODF	153	93.3	107	51	41.3	55	37
18 mm - 3/4" ODF	160	93.3	107	51	41.3	55	37
22 mm - 7/8" ODF	170	93.3	107	51	41.3	55	37
28 mm - 1-1/8" ODF	180	96.3	110	51	41.3	55	37



5

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# RT14, YB14 & CD21

## Type Coils for V Series Solenoid Valves

We offer three different types of coils for **V Solenoid Valves**.

The preferred coil should be selected depending on the application and based on the required: current, Voltage and IP rating. If the required coil has different specifications from those in the table, please contact your Parker Sporlan distributor.

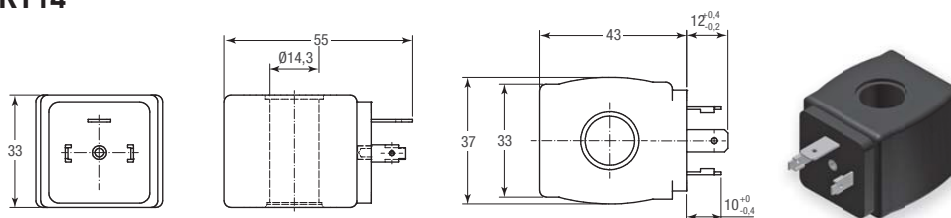
All the coils are manufactured with class H copper wire, molded in thermoplastic (polyester) with 30% glass fiber.

### Technical Specification

Part Number	Coil Type	Voltage - Frequency	Power	Electrical Connection
304987	RT14	230V AC +/-10% 50/60Hz	14 W	DIN connector (not included)
304983	RT14	24V AC +/-10% 50/60Hz	14 W	DIN connector (not included)
304985	RT14	115V AC +/-10% 50/60Hz	14 W	DIN connector (not included)
304505	YB14	230V AC +/-10% 50/60Hz	14 W	Flying leads
304431	YB14	24V AC +/-10% 50/60Hz	14 W	Flying leads
304433	YB14	115V AC +/-10% 50/60Hz	14 W	Flying leads
304584	CD21	12V DC +/-5%	21 W	DIN connector (not included)
304586	CD21	24V DC +/-5%	21 W	DIN connector (not included)
600000R	PG 9/11 DIN connector for RT14 and CD21 coils			

### Dimensions in mm

#### RT14

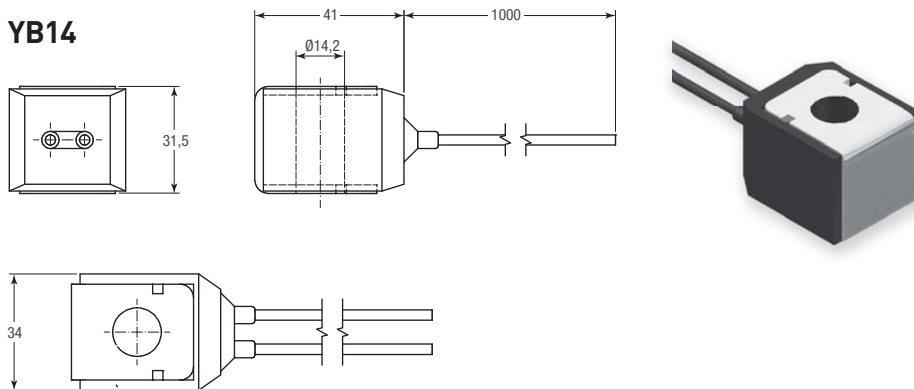


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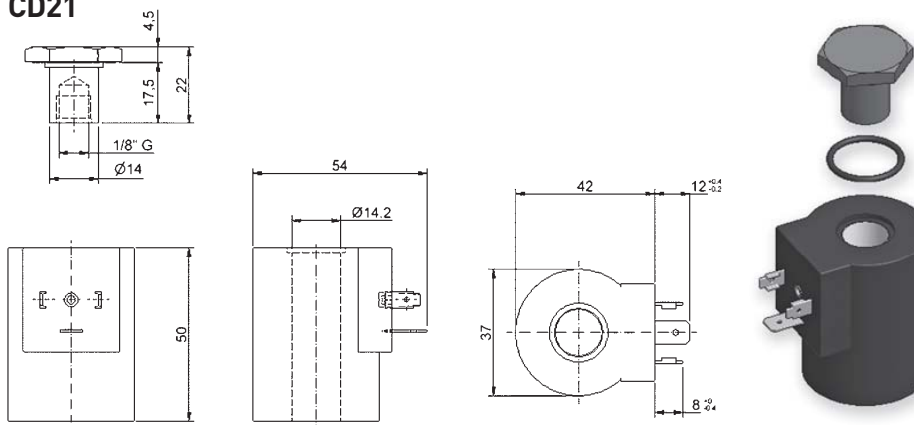
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## Dimensions in mm

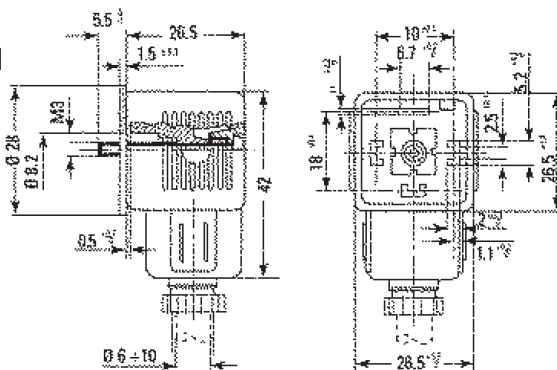
### YB14



### CD21



### PG 9/11 DIN Connector



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# E-HP Series

## 48 MRP. Disc Operated Refrigeration Solenoid Valves

Parker Sporlan **E-HP Series Solenoid Valves** have been especially developed for high pressure applications. Robust floating disc type construction makes **HP Series** an excellent choice for high pressure refrigerants, like R410A or subcritical CO<sub>2</sub>, and heavy duty application, like hot gas service.

### Technical Specification

**Compatibility:** CFC, HCFC and HFC refrigerants and blends including R410A, CO<sub>2</sub> and most refrigeration oils

**MRP:** 48.3 barg

**Temperature range:** -40°C to +49°C ambient and -40°C to 115°C fluid

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

#### Direct Acting

Valve Type	Part Number	Connections ODF		Flow Coefficient Kv m <sup>3</sup> /h	Minimum Pressure Differential bar	Maximum Pressure Differential M.O.P.D.		Coil Type A.C./D.C.
		Inches	mm			A.C. (-) bar	D.C. (=) bar	
E2S120-HP	4101-00	1/4	1.9	0.13	0	31	27.6	MKC-1E
E2S130-HP	4106-00	3/8	1.9	0.13	0	31	27.6	MKC-1E

#### Pilot Operated

Valve Type	Part Number	Connections		Flow Coefficient Kv m <sup>3</sup> /h	Minimum Pressure Differential bar	Maximum Pressure Differential M.O.P.D.		Coil Type A.C./D.C.
		Inches	mm			A.C. (-) bar	D.C. (=) bar	
E5S130-HP	4079-00	3/8	3.8	0.5	0.07	31	27.6	MKC-1E
E6S130-HP	3233-00	3/8	4.8	0.8	0.07	31	27.6	MKC-1E
E6S140-HP	4122-00	1/2	4.8	0.8	0.07	31	27.6	MKC-1E
E9S240-HP	4033-00	1/2	7.1	1.3	0.07	31	27.6	MKC-2E
E9S250-HP	3402-00	5/8	7.1	1.3	0.07	31	27.6	MKC-2E
E10S240-HP	3525-00	1/2	7.9	1.8	0.07	31	27.6	MKC-2E
E10S250-HP	3448-00	5/8	7.9	1.8	0.07	31	27.6	MKC-2E
E14S250-HP	4100-00	5/8	11	2.5	0.07	31	27.6	MKC-2E
E14S270-HP	4215-00	7/8	11	2.5	0.07	31	27.6	MKC-2E
E19S250-HP	4072-00	5/8	15	3.9	0.07	31	27.6	MKC-2E
E19S270-HP	4077-00	7/8	15	3.9	0.07	31	27.6	MKC-2E
E25S270-HP	4089-00	7/8	20	6.7	0.07	31	27.6	MKC-2E
E25S290-HP	4078-00	1-1/8	20	6.7	0.07	31	27.6	MKC-2E
E35S190-HP	3316-00	1-1/8	26	9.3	0.07	31	27.6	MKC-1E
E35S1110-HP	4099-00	1-3/8	26	9.3	0.07	31	27.6	MKC-1E
E42S2130-HP	4074-00	1-5/8	34	20.4	0.07	31	27.6	MKC-2E
E42S2170-HP	4148-00	2-1/8	34	20.4	0.07	31	27.6	MKC-2E

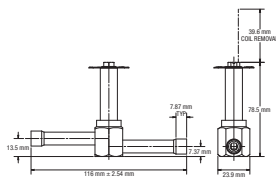
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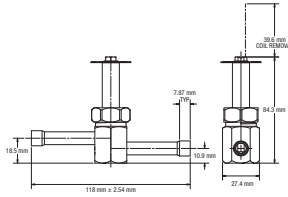


# Valve Dimensions

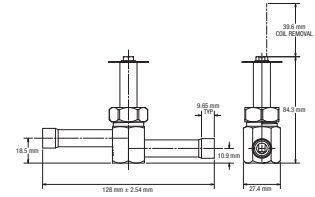
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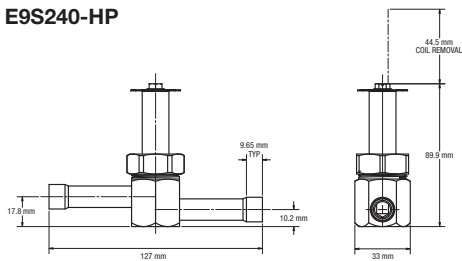
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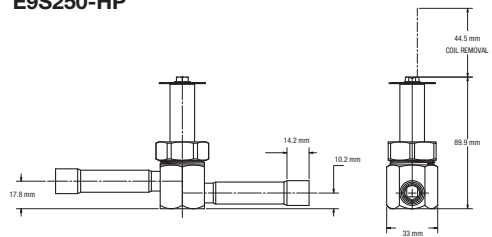
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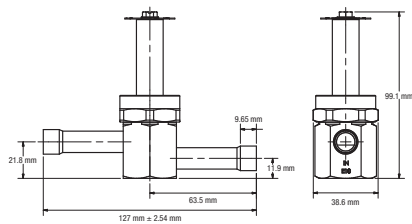
**E9S240-HP**



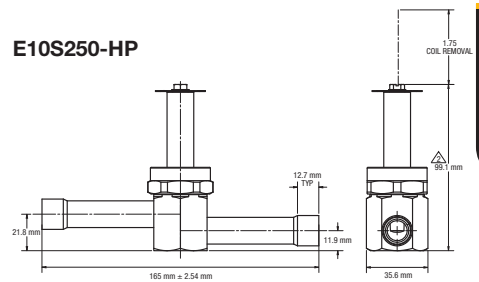
**E9S250-HP**



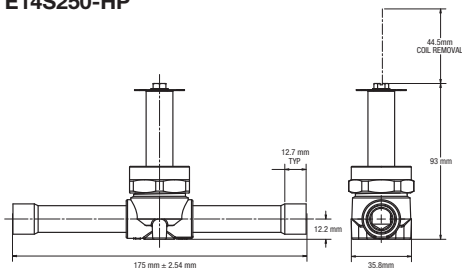
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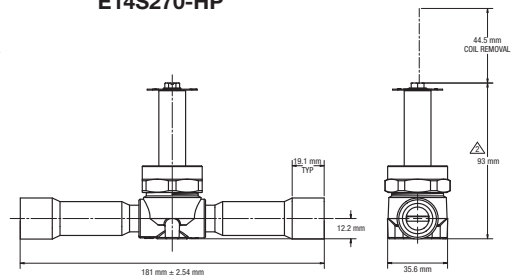
**E10S250-HP**



**E14S250-HP**



**E14S270-HP**



**5**

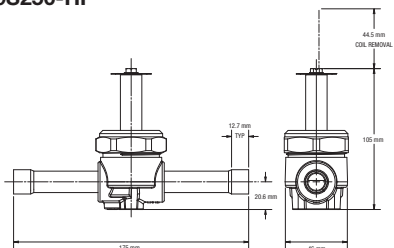
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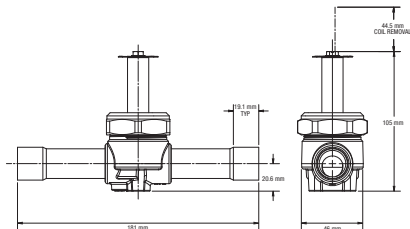


# Valve Dimensions

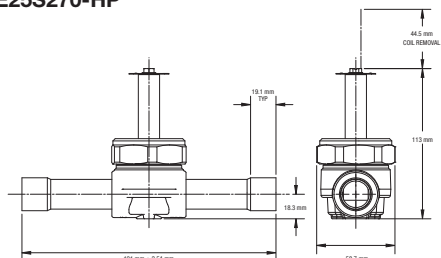
**E19S250-HP**



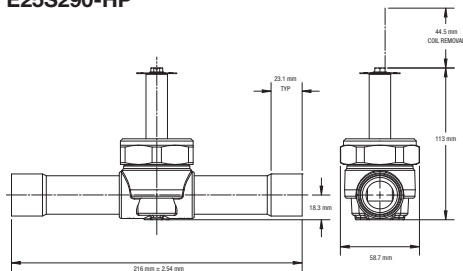
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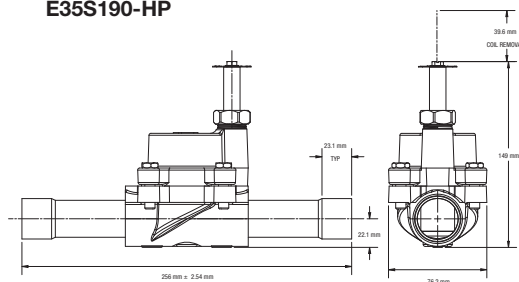
**E25S270-HP**



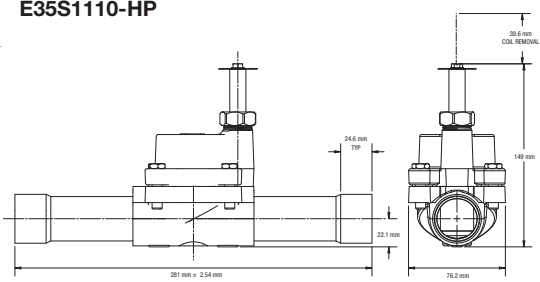
**E25S290-HP**



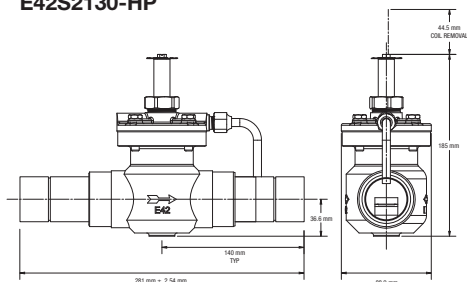
**E35S190-HP**



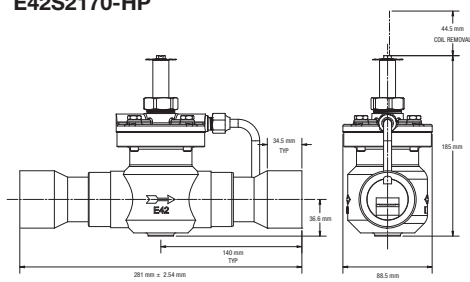
**E35S1110-HP**



**E42S2130-HP**



**E42S2170-HP**



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# MKC

## Type Coils for High Pressure E-HP Series Solenoid Valves

Parker Sporlan **MKC Solenoid Coils** are constructed with the finest materials available. The number 1 or 2 coils are Class F and are available in many voltage and cycle ratings.

The preferred coil should be selected depending on the application and based on the required: current, voltage and IP rating. If the required coil has different expectations from those in the table, please contact your Parker Sporlan representative.

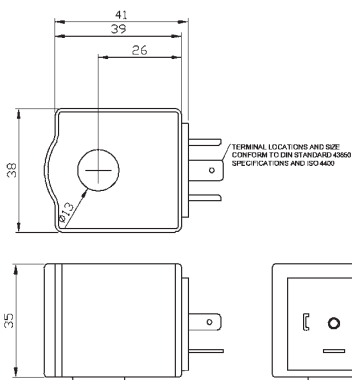
### Technical Specification

Part Number	Coil Type	Power	Electrical Connection
310683	MKC-1E 24 V / 50-60 Hz	10 W	DIN connector (not included)
310678	MKC-1E 120 V / 50-60 Hz	10 W	DIN connector (not included)
310679	MKC-1E 220-240 V / 50 Hz	10 W	DIN connector (not included)
310682	MKC-1E 208-240 V / 50-60 Hz	10 W	DIN connector (not included)
310675	MKC-2E 24 V / 50-60 Hz	15 W	DIN connector (not included)
310677	MKC-2E 120 V / 50-60 Hz	15 W	DIN connector (not included)
310681	MKC-2E 220-240 V / 50 Hz	15 W	DIN connector (not included)
310674	MKC-2E 208-240 V / 50-60 Hz	15 W	DIN connector (not included)
310040	MKC-1E 12 V DC	15 W	DIN connector (not included)
310041	MKC-1E 24 V DC	15 W	DIN connector (not included)
310691	MKC-2E 24 V DC	18 W	DIN connector (not included)
600000R	PG 9/11 DIN connector for MKC-1E and MKC-2E coils		

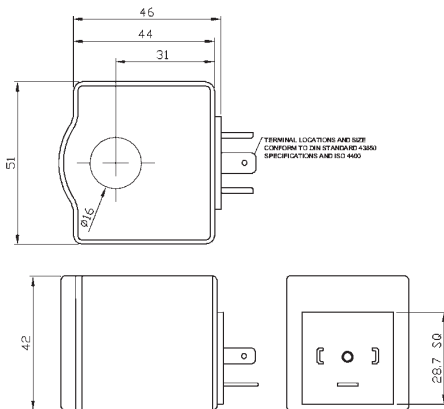
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### Dimensions in mm

#### MKC-1E



#### MKC-2E



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## Compliance to Regulations and Standards

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**V Series** and **E-HP Series Solenoid Valves** are fully compliant to European regulation including:

- European Directives 97/23/CE (PED)
- 2006/95/CE (Low Voltage)
- RoHS

**E-HP** solenoid valves are UL listed under file: **MH 4576**

**MKC** coils are UL listed under file: **MH 29763**

**RT14** coils are UL listed under file: **MH 19410**

Declarations of conformity are available upon request.

## Top Quality for Parker Sporlan Solenoid Valves

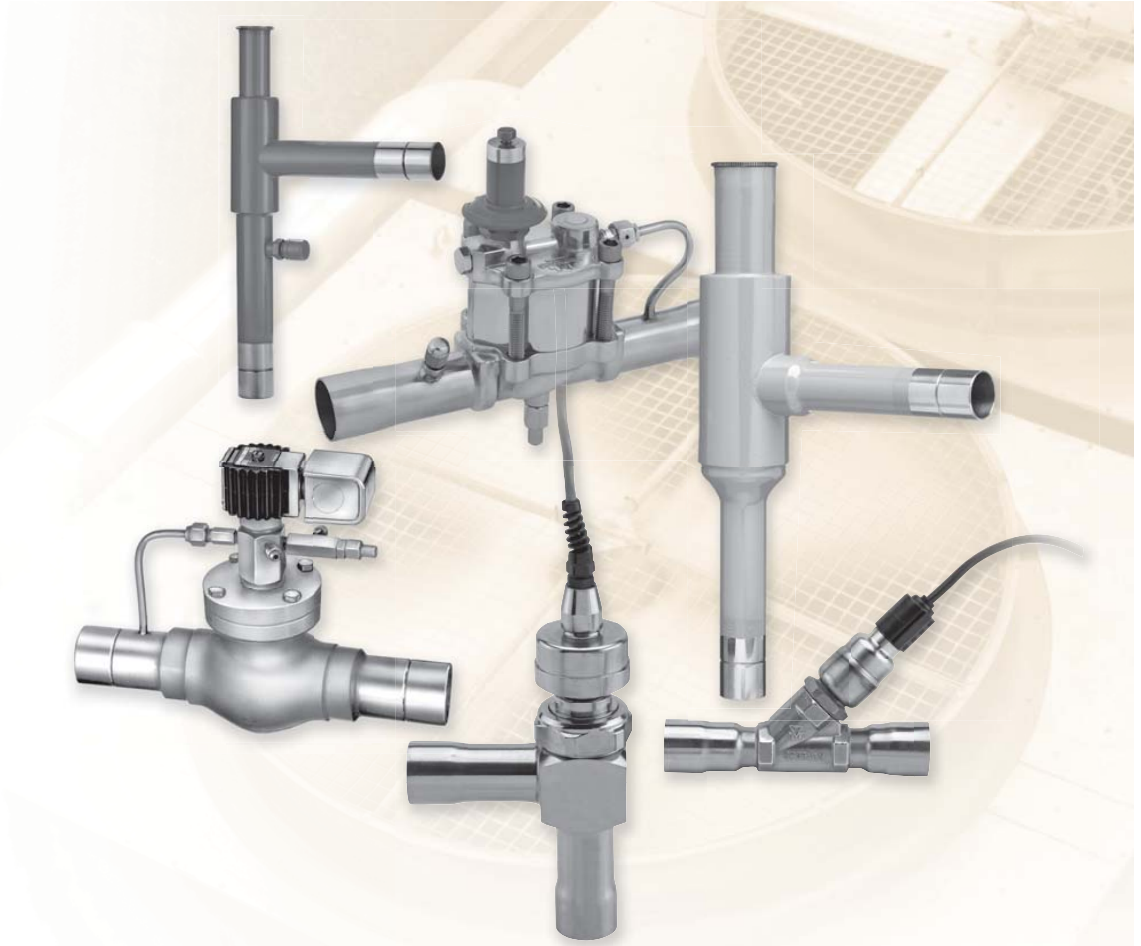
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Testing is performed during all phases of production followed by 100% testing for body and seat tightness, electrical characteristics and valves operation.

Our packaging protects this quality for the ultimate user.

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## Pressure Regulating Valves

6

Precise control of temperatures in evaporators  
 Economical method of compressor capacity control  
 Prevent overloading to the compressor  
 High and low ambient stability  
 Defrost differential control



ENGINEERING YOUR SUCCESS.

# Electric Stepper Motor Control Valves for the Suction Line

The **CDS Valves** are designed for more precise and energy efficient control of temperatures in evaporators. Proper temperature is obtained by regulating refrigerant flow in the evaporator in response to signals generated by an electronic controller and sensor combination. The valves are built around balanced ports, which allows input power of only 4 watts, less than one quarter of the power used by older heat motor and analog designs.

When not actively stepping, power to the motor is removed for further energy savings. The step motors used are standard 12-Volt DC bipolar designs, which in concert with the integral gear reduction, give the valves unsurpassed accuracy and repeatability over the entire operating range. Since the valves are powered from an external controller, no pilot lines or high to low side bleeds are required. The properly applied **CDS Valve** and controller can replace standard mechanical Evaporator Pressure Regulators (EPR), suction stop solenoid valves, and conventional thermostats.

With different seating materials, **CDS-16 Valves** may be applied as heat reclaim, head pressure control, or liquid line differential valves. **CDS-9 and -17** are suitable for these applications as supplied.

Contact Race Division for more information.

Due to the stepper motor design, the **CDS Series** are the first evaporator control valves that may be sized to contribute NO additional pressure drop to the suction line.

Simplified cartridge design allows all moving parts to be replaced as a unit. Only the valve body is left in the line. This will allow maintenance or repair without unsweating the entire valve.

## CDS - Valve Nomenclature/Ordering Instructions

The CDS-16 is the only angled valve. The CDS-4, CDS-7, CDS-9 and CDS-17 are straight through valves.

<b>CDS</b>	-	<b>T</b>	-	<b>17</b>	-	<b>1-3/8 x 1-3/8 ODF</b>	-	<b>20</b>	-	<b>S</b>
Controls Discharge Stepmotor		Optional Inlet Pressure Tap		Model Number		Fitting Size		Cable Length 20' = 6m 10' = 3m		S = Stripped and tinned cable ends.

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

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# Index

## Pressure Temperature Regulating Valves

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### Electric Pressure Temperature Regulating Valves

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## Stepper Motor Valves for the Suction Line Valves Specifications

Valve	CDS(T)-4 and -7	CDS(T)-9,-17 and -16
Motor Type	2 phase, bipolar wet motor	
Compatible Refrigerant	All common CFC, HCFC and HFC refrigerants, including R-410A and subcritical R-744	
Compatible Oils	All common Mineral, Polyolester and Alkybenzene oils	
Supply Voltage	12 VDC -5% +10% measured at the valve leads	
Cable Type	IP66 Removable	Hermetic
Phase Resistance	100 Ohms ± 10%	75 Ohms ± 10%
Current Range	104 to 147 mA / winding	131 to 215 mA / winding
Power Input	3 W	4 W
Recommended Step Rate	200 / s	200 / s
Number of Steps	2500	6386
Full Motor Transit Time	12.5 seconds	34 seconds
Resolution	.000119" (.003 mm) / step.	.0000783" (.002 mm) / step.
Total Stroke	0.297" (7.54 mm)	.50" (12.7 mm)
MRP	700 psig (48 bar)	680 psig (47 bar)
Max Internal Leakage	Less than 400 cc/min @ 100 psig (6.9 barg)	
Max External Leakage	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
Operating Temp. Range	-45°C to 60°C (-50°F to 140°F)	
Materials of Construction	Brass, copper, synthetic seals, stainless steel	

## Available Connections

Valve Type	Inlet Inches ODF	Outlet Inches ODF	Configuration	Cable Length		Cable Ends
				Feet	Meters	
CDS(T)-4	1/2, 5/8, 7/8	1/2, 5/8, 7/8	Straight Through Offset	10, 20	3, 6	S Stripped and Tinned
CDS(T)-7	5/8, 7/8, 1-1/8, 1-3/8	5/8, 7/8, 1-1/8, 1-3/8				
CDS(T)-9	5/8, 7/8, 1-1/8, 1-3/8	5/8, 7/8, 1-1/8, 1-3/8				
CDS(T)-17	1-3/8, 1-5/8, 2-1/8	1-3/8, 1-5/8, 2-1/8				
CDS(T)-16	1-3/8	1-3/8	Angle			

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# Stepper Motor Valves for the Suction Line Selection Table

Capacities in kW

Type	Evaporator Temp. °C	Refrigerant																							
		134a						404A/507						407C						410A					
		Pressure Drop Across Valve - bar																							
		0.03	0.06	0.1	0.2	0.4	0.7	0.03	0.06	0.1	0.2	0.4	0.7	0.03	0.06	0.1	0.2	0.4	0.7	0.03	0.06	0.1	0.2	0.4	0.7
CDS-4	0	2.62	3.68	4.72	6.63	9.10	11.4	3.07	4.31	5.53	7.76	10.9	14.4	3.22	4.52	5.8	8.14	11.5	14.7	4.17	5.86	7.52	10.6	14.8	19.5
	-10	2.12	2.98	3.83	5.30	7.09	8.60	2.53	3.55	4.55	6.39	9.06	11.6	2.63	3.69	4.74	6.65	9.18	11.5	3.49	4.9	6.30	8.84	12.4	16.3
	-20	1.69	2.37	3.01	4.09	5.3	6.07	2.05	2.88	3.69	5.18	7.17	9.01	2.11	2.97	3.81	5.29	7.11	8.67	2.88	4.04	5.19	7.28	10.2	13.0
	-30	1.31	1.82	2.29	3.03	3.70	3.83	1.63	2.29	2.94	4.09	5.51	6.72	1.67	2.34	2.97	4.04	5.27	6.09	2.33	3.27	4.20	5.89	8.04	10.0
CDS-7	0	7.49	10.4	13.3	18.3	24.5	29.5	8.69	12.0	15.3	21.1	29.2	39.3	9.21	12.7	16.2	22.4	31.6	39.4	11.8	16.4	20.8	28.8	39.8	51.7
	-10	6.02	8.41	10.7	14.5	18.7	21.1	7.20	9.97	12.7	17.5	24.9	31.0	7.51	10.5	13.3	18.4	24.8	30.1	9.98	13.8	17.5	24.2	33.5	44.5
	-20	4.75	6.59	8.29	11.0	13.3	13.8	5.87	8.14	10.3	14.3	19.4	23.5	5.99	8.38	10.6	14.5	18.8	21.6	8.25	11.5	14.5	20.1	28.0	34.8
	-30	3.65	5.01	6.21	7.85	8.53	8.53	4.64	6.49	8.24	11.2	14.6	16.7	4.68	6.50	8.19	10.9	13.3	13.9	6.63	9.29	11.9	16.3	21.7	25.9
CDS-9	0	11.0	15.5	19.8	27.5	37.5	46.6	13.0	18.0	22.9	31.9	44.3	59.5	13.6	19.0	24.2	33.7	47.5	60.5	17.6	24.5	31.2	43.4	60.3	78.6
	-10	8.88	12.5	15.9	21.9	29.1	34.9	10.7	14.9	19.0	26.4	37.4	47.6	11.1	15.6	19.9	27.7	37.8	47.3	14.8	20.6	26.3	36.5	50.7	67.4
	-20	7.02	9.80	12.4	16.8	21.6	24.3	8.65	12.1	15.5	21.5	29.6	36.9	8.84	12.4	15.8	21.8	29.2	35.3	12.2	17.1	21.8	30.2	42.3	53.7
	-30	5.42	7.51	9.44	12.4	14.9	15.2	6.84	9.60	12.3	16.9	22.6	27.4	6.92	9.67	12.3	16.6	21.5	24.4	9.77	13.7	17.6	24.4	33.1	41.0
CDS-16	0	18.5	25.9	32.8	45.3	60.1	71.5	21.5	29.7	37.8	52.2	72.1	96.4	22.8	31.5	40.0	55.3	77.6	96.4	29.3	40.5	51.4	71.1	98.3	128
	-10	14.9	20.7	26.3	35.5	45.5	50.7	17.8	24.7	31.3	43.3	61.0	75.9	18.5	26.0	33.0	45.6	60.9	73.2	24.7	34.2	43.4	59.9	82.8	109
	-20	11.7	16.2	20.4	26.8	32.2	32.8	14.5	20.2	25.6	35.4	47.6	57.2	14.8	20.7	26.2	35.5	45.8	51.9	20.4	28.4	36.0	49.8	68.8	85.1
	-30	9.01	12.3	15.2	19.0	20.3	20.3	11.4	16.0	20.3	27.5	35.5	40.3	11.5	16.0	20.1	26.6	32.2	33.1	16.4	22.9	29.2	40.0	53.0	62.8
CDS-17	0	20.0	27.8	35.5	49.4	67.6	83.5	23.2	32.3	41.1	57.3	79.7	108	24.4	34.0	43.4	60.4	85.9	109	31.6	43.9	56.0	78.0	109	142
	-10	16.1	22.6	28.8	39.5	52.3	62.1	19.2	26.7	34.0	47.3	67.6	85.8	20.1	27.9	35.6	49.6	68.2	84.8	26.5	36.9	47.1	65.5	91.2	122
	-20	12.7	17.8	22.5	30.3	38.6	42.6	15.6	21.7	27.7	38.6	53.3	66.3	16.0	22.5	28.7	39.4	52.5	62.9	21.9	30.5	39.0	54.2	76.4	96.6
	-30	9.83	13.6	17.0	22.2	26.2	26.5	12.4	17.4	22.2	30.5	40.7	48.8	12.6	17.5	22.2	30.0	38.4	42.9	17.7	24.8	31.7	44.1	59.7	73.6

Capacities based on 16°C liquid and 14°C superheated vapor.

Refrigerant	Liquid Temperature Entering TEV °C										
	-10°	-5°	0°	5°	10°	15°	20°	25°	30°	35°	40°
	Correction Factor, CF										
134a	1.21	1.17	1.13	1.09	1.05	1.01	0.97	0.92	0.88	0.84	0.79
404A/507	1.27	1.22	1.17	1.12	1.07	1.01	0.96	0.90	0.84	0.78	0.72
407C	1.21	1.17	1.13	1.09	1.05	1.01	0.97	0.92	0.88	0.84	0.79
410A	1.21	1.17	1.13	1.09	1.05	1.01	0.97	0.92	0.87	0.83	0.78

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Use the correction factor for 38°C liquid temperature and the capacities at 5°C evaporator temperature to determine ARI standard capacity ratings.

**Example:** The capacity of a CDS-7 using R-407C, evaporator temperature of -20°C, 0.06 bar pressure drop across the valve and a liquid temperature of 10°C is equal to (8.38 x 1.05) 8.79 kilowatts.

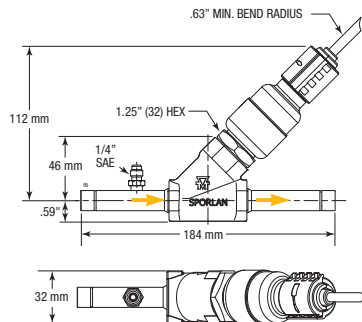
These factors correct for net refrigerating effect and are based on an average temperature of -15°C. However, they may be used for any evaporator temperature from -30°C to 0°C since the variation in the actual factors across this range is insignificant.

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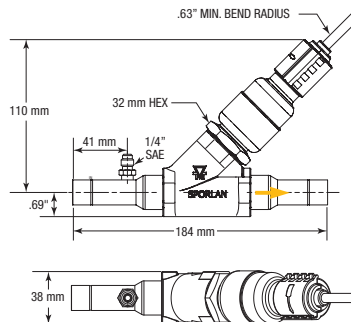


# Stepper Motor Valves for the Suction Line Valves Dimensions

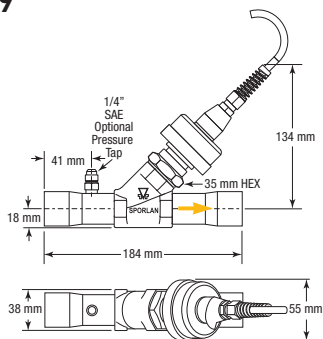
## CDS-4



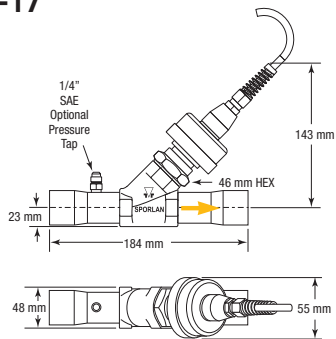
## CDS-7



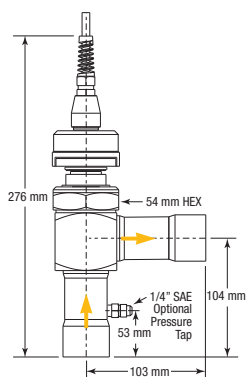
## CDS-9



## CDS-17



## CDS-16



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## Stepper Motor Valves for the Suction Line Order Selection Guide

Type	Connections	Body Configuration	Cable length in meter	Kv m <sup>3</sup> /h	Part Number
CDS-4	1/2" x 1/2" ODF	Straight Through Offset	3	2.53	950018
	5/8" x 5/8 ODF				950019
	7/8" x 7/8" ODF				950020
CDST-4	1/2" x 1/2" ODF	Straight Through Offset With Pressure Tap	6	2.53	Special order valve
	5/8" x 5/8 ODF				950028
	7/8" x 7/8" ODF				950029
CDS-7	5/8" x 5/8" ODF	Straight Through Offset	3	6.91	950008
	7/8" x 7/8" ODF /				Special order valve
	1-1/8" x 1-1/8" ODF				950011
	1-3/8" x 1-3/8" ODF				Special order valve
CDST-7	5/8" x 5/8" ODF	Straight Through Offset With Pressure Tap	6	6.91	950046
	7/8" x 7/8" ODF /				950036
	1-1/8" x 1-1/8" ODF				950038
	1-3/8" x 1-3/8" ODF				950040
CDS-9	5/8" x 5/8" ODF	Straight Through Offset	3	9.81	940032
	7/8" x 7/8" ODF /				940033
	1-1/8" x 1-1/8" ODF				940034
	1-3/8" x 1-3/8" ODF				940057
CDST-9	5/8" x 5/8" ODF	Straight Through Offset With Pressure Tap	6	9.81	940089
	7/8" x 7/8" ODF /				940080
	1-1/8" x 1-1/8" ODF				940081
	1-3/8" x 1-3/8" ODF				940082
CDS-17	1-3/8" x 1-3/8 ODF	Straight Through Offset	3	17.8	940039
	1-5/8" x 1-5/8 ODF				940040
	2-1/8" x 2-1/8" ODF				940074
CDST-17	1-3/8" x 1-3/8 ODF	Straight Through Offset With Pressure Tap	6	17.8	940090
	1-5/8" x 1-5/8 ODF				940083
	2-1/8" x 2-1/8" ODF				940091
CDS-16	1-3/8" x 1-3/8" ODF	Angle	3	17.3	940012
CDST-16	1-3/8" x 1-3/8" ODF	Angle With Pressure Tap	6	17.3	Special order valve

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## CDS Valve Kits

### Motor Kits for CDS(T) Valves

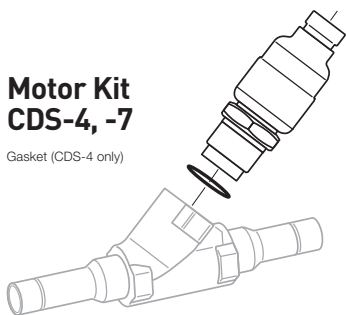
Valve Type	KIT No.	Part Number
CDS(T)-4	KS-CDS(T)-4	958182
CDS(T)-7	KS-CDS(T)-7	958183
CDS(T)-9	KS-CDS(T)-9	958122
CDS(T)-17	KS-CDS(T)-17	958123
CDS(T)-16	KS-CDS(T)-16	958111

### Cable Assembly Kits for CDS(T) Valves

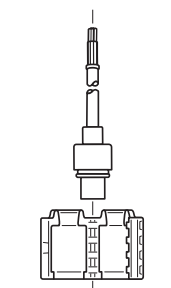
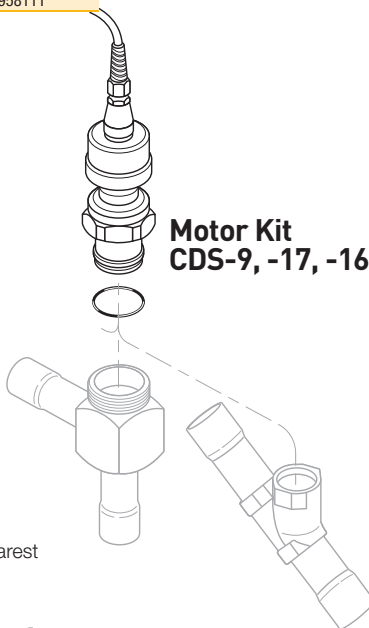
Valve Type	Cable Length	Part Number
CDS(T)-4, -7	3 m	805081
	6 m	805082
	9 m	805083
	12 m	805084

### Motor Kit CDS-4, -7

Gasket (CDS-4 only)



### Motor Kit CDS-9, -17, -16



### Cable Kit CDS(T)-4, -7

For complete information, consult your nearest Parker Sporlan Wholesaler.

## Components & Accessories

Product	Part Number	Description
	983188	IB2 Interface Board (2500 steps)
	952957	IB6 Interface Board (6386 steps)
	953276	SMA-12 Stepper Motor Actuator Test Instrument

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)

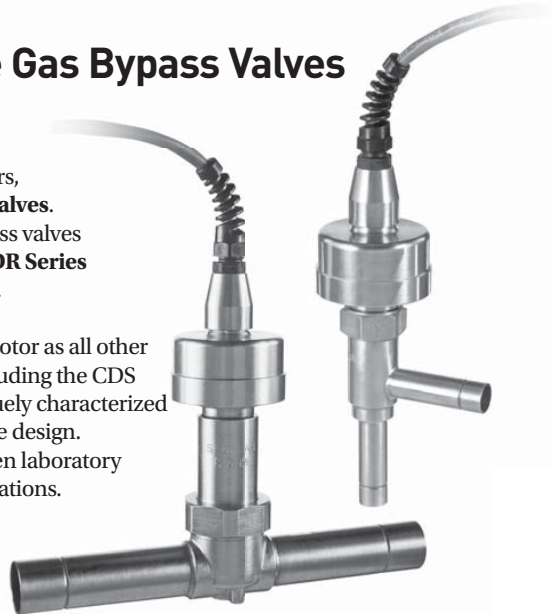
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# Stepper Motor Discharge Gas Bypass Valves

**SDR Series Valves** are Step Discharge Regulators, or electrically operated discharge **Gas Bypass Valves**. Unlike previous mechanical discharge gas bypass valves that only control a downstream pressure, the **SDR Series** offers direct temperature control of air or liquid.

The valves use the same 12 V DC bipolar step motor as all other Parker Sporlan step motor operated valves, including the CDS valves above. Balanced pistons and ports, uniquely characterized for hot gas flow, have been incorporated into the design. Seating materials, motors and gears have all been laboratory and field proven in high temperature gas applications.

With capacities up to 25 nominal R-22 tons, the **SDR Series** is suitable for use in small process chillers and environmental chambers, as well as large direct expansion air conditioning applications.



The valves may be controlled by third party controllers or by the Parker Sporlan IB Interface Board. **SDR Valves** are normally installed in the same manner as mechanical discharge gas bypass valves; in a bypass branch of the discharge gas line. The valves may be piped to feed into the evaporator at the distributor, downstream of the evaporator, or at the compressor suction. Contact "racecustomerservice@parker.com" for additional piping recommendations. When applied with a third party controller or DDC building management system, the **SDR** can be used with the IB as an interface to the existing system.

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## SDR - Valve Nomenclature/Ordering Instructions

<b>S</b>	<b>DR</b>	<b>4</b>	<b>7/8 x 7/8</b>	<b>10</b>	<b>S</b>
Step Motor Operated	Discharge Regulator	Nominal Size 3 or 4 available	Connections ODF SDR-3 3x - 3/8, 1/2, 5/8 SDR-4 - 7/8 1-1/8	Cable Length 10' standard, 20' = 6m 10' = 3m	S = Stripped and tinned cable ends.

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)

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## SDR Specifications

Valve	SDR-3 and 3x	SDR-4
Motor Type	2 phase, bipolar wet motor	
Compatible Refrigerant	All common CFC, HCFC and HFC refrigerants, including R-410A and subcritical R-744	
Compatible Oils	All common Mineral, Polyolester and Alkybenzene oils	
Supply Voltage	12 VDC -5% +10% measured at the valve leads	
Cable Type	Hermetic	Hermetic
Phase Resistance	75 Ohms $\pm$ 10%	75 Ohms $\pm$ 10%
Current Range	131 to 215 mA / winding	131 to 215 mA / winding
Power Input	4 W	4 W
Recommended Step Rate	200 / s	200 / s
Number of Steps	3193	6386
Full Motor Transit Time	16 seconds	34 seconds
Resolution	0000783" (.002 mm) / step.	.0000783" (.002 mm) / step.
Total Stroke	0.250" (6.4 mm)	.50" (12.7 mm)
MRP	700 psig (48 barg)	700 psig (48 barg)
Max Internal Leakage	Less than 400 cc/min @ 100 psig (6.9 barg)	
Max External Leakage	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
Operating Temp. Range Fluid	-40°C to 116°C (-40°F to 240°F)	
Operating Temp. Range Ambient	-40°C to 60°C (-40°F to 140°F)	
Materials of Construction	Brass, copper, synthetic seals, stainless steel	

## Available Connections

Valve Type	Inlet Inches ODF	Outlet Inches ODF	Configuration	Cable Length		Cable Ends
				Feet	Meters	
SDR-3	3/8, 1/2, 5/8	3/8, 1/2, 5/8	Angle	10, 20	3, 6	(S- Stripped and Tinned)
SDR-3x	3/8, 1/2, 5/8	3/8, 1/2, 5/8				
SDR-4	7/8, 1-1/8	7/8, 1-1/8	Straight Through Offset			

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## SDR Selection Tables

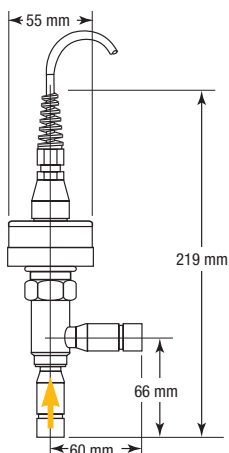
Capacities in kW

Refrigerant	Valve Type	Minimum Allowable Evaporator Temperature at Reduced Load °C																	
		5°			3°			-7°			-18°			-29°			-40°		
		26	38	49	26	38	49	26	38	49	26	38	49	26	38	49	26	38	49
22	SDR-3	18.9	24.2	30.5	18.9	23.5	29.1	18.6	23.5	28.4	17.2	21.7	26.6	16.1	20.3	24.9	15.1	19.3	23.8
	SDR-3X	34.3	44.1	55.7	34.7	44.5	56.0	34.7	44.5	56.0	35.0	44.8	56.7	35.4	45.5	57.4	35.7	46.2	58.1
	SDR-4	62.7	88.2	122	67.9	92.4	125	69.3	98.0	127	73.2	98.4	130	75.6	100	131	77.0	104	132
134a	SDR-3	13.3	16.5	19.3	12.6	15.4	18.2	12.3	14.7	17.9	10.9	13.3	16.5	9.8	12.3	15.4	9.1	11.6	14.7
	SDR-3X	24.1	30.0	35.2	23.1	29.2	35.1	22.9	27.9	35.3	22.1	27.5	35.1	21.5	27.5	35.6	21.6	27.7	35.9
	SDR-4	46.6	64.4	83.3	49.7	66.9	85.4	50.8	67.6	86.1	53.2	69.7	87.5	54.6	70.7	88.6	55.3	71.4	89.3
404/507	SDR-3	21.0	25.6	30.1	22.1	25.9	29.8	21.4	25.2	29.4	19.6	23.5	27.7	17.5	21.0	26.3	16.8	20.3	25.2
	SDR-3X	38.1	46.7	55.0	40.4	49.1	57.3	39.9	47.8	58.1	40.0	48.4	58.9	38.4	47.1	60.6	39.9	48.7	61.5
	SDR-4	69.7	91.7	111	80.9	104	126	83.0	105	127	87.5	109	130	85.1	104	123	93.1	115	136
407C	SDR-3	18.9	23.1	28.7	18.2	23.1	27.3	17.9	21.7	27.0	16.5	20.3	25.2	15.1	18.9	23.8	14.0	17.9	22.8
	SDR-3X	34.3	42.2	52.5	33.4	43.8	52.6	33.3	41.1	53.2	33.6	41.9	53.7	33.0	42.4	55.0	33.2	42.8	55.5
	SDR-4	64.1	87.5	119	69.3	97.3	123	71.1	96.3	125	75.6	97.3	128	78.4	100	132	80.5	103	135
410A	SDR-3	31.9	39.6	47.7	31.9	39.6	47.7	31.9	39.6	47.6	31.9	39.6	47.7	31.9	39.6	47.7	-	-	-
	SDR-3X	57.0	71.1	85.6	57.3	71.1	85.6	57.3	71.1	85.6	57.3	71.1	85.6	57.3	71.1	85.6	-	-	-
	SDR-4	104.0	139.8	174.0	112.9	146.5	179.4	115.7	148.7	185.6	122.4	154.1	185.9	126.3	157.5	188.9	-	-	-

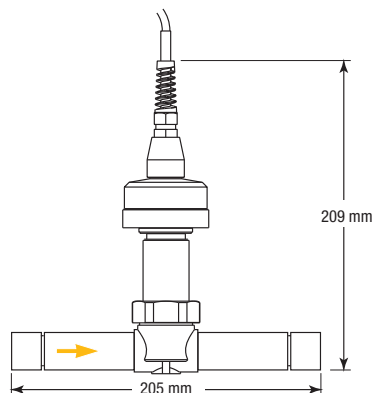
**Note:** Capacities are based on discharge temperature 28°C above isentropic compression, 55°C condensing temperature, 0°C subcooling, 13°C superheat at the compressor and includes both the hot gas bypassed and the liquid refrigerant for desuperheating, regardless of whether the liquid is fed through the system thermostatic expansion valve or auxiliary desuperheating expansion valve.

## Valve Dimensions

### SDR-3, 3X



### SDR-4



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## Order Selection Guide

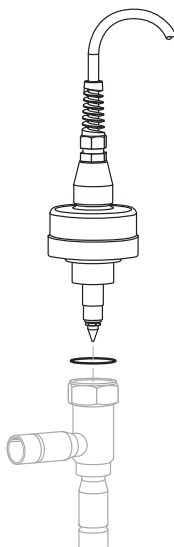
Type	Connections	Body Configuration	Cable length in meter	Kv m <sup>3</sup> /h	Part Number
SDR-3	3/8" x 3/8" ODF	Angle	3	0.96	930002
	1/2" x 1/2" ODF				930003
	5/8" x 5/8 ODF				930004
SDR-3x	3/8" x 3/8" ODF	Angle	3	1.5	930027
	1/2" x 1/2" ODF				930022
	5/8" x 5/8 ODF				930023
SDR-4	7/8" x 7/8" ODF	Straight Through Offset	3	2.7	930000
	1-1/8" x 1-1/8" ODF				930001

## SDR Valve Kits

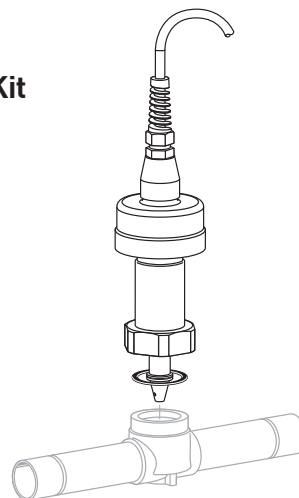
### Motor kits for SDR Valves

Valve Type	Kit Number	Part Number
SDR-3	KS-SDR-3	958131
SDR-3x	KS-SDR-3x	958159
SDR-4	KS-SDR-4	958132

### Motor Kit SDR-3, 3X



### Motor Kit SDR-4



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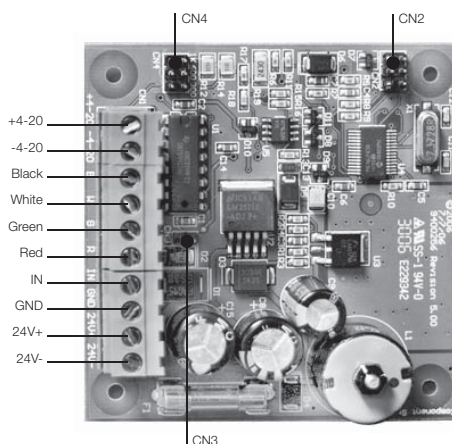


## Components & Accessories

Product	Part Number	Description
	952956	IB3 Interface Board (3193 steps)
	952957	IB6 Interface Board (6386 steps)
	953276	SMA-12 Stepper Motor Actuator Test Instrument

The **IB Interface Board** allows all Parker Sporlan stepper motors to be modulated in response to an externally generated signal. The **IB** accept a 4-20 mA, or 0-10 Volt DC inputs and stroke the valve proportionately to that signal. The **IB** allow use of the CDS or SDR valves with an existing DDC system or other generic temperature controller for hot gas bypass, evaporator temperature, or reclaim applications.

The **IB Interface Board** have screw terminals for easy connections, and should be mounted in a control panel or other enclosure.



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## Discharge Bypass Valves

The Parker Sporlan Line of Discharge Bypass Valves are designed to provide an economical method of compressor capacity control in place of cylinder unloaders or to handle unloading requirements below the last step of cylinder unloading. These modulating control valves automatically bypass the required amount of discharge gas to the low side to maintain the desired minimum evaporator pressure. The valves are applicable on any refrigeration or air conditioning system that operates during periods of low load, which can result in coil icing or short cycling. These valves respond to downstream pressure changes and open when the evaporator pressure falls below the valve setting. At normal loads and evaporator conditions, the valve remains closed and the system operates in a conventional manner.



**The DR line of valves consists of three basic types of valves: the adjustable models, the adjustable remote bulb models, and the non-adjustable models.**

**The SHGB valves are adjustable and pilot operated with a solenoid stop feature that eliminates the need for a hot gas solenoid valve.**

**They were developed for use on larger capacity systems.**

## Application

The discharge bypass valve is normally applied in a branch line off the discharge line. To allow system pump down control, a solenoid valve or hand valve must be installed upstream of the discharge DR type bypass valves. The bypassed hot gas can enter the low side at several locations; however, two of the possible locations are preferred because of superior operating performance: into the side connection of a Parker Sporlan side connection distributor or directly into the suction line. By using the side connection distributor method, the system TEV will act as a desuperheating valve to keep the compressor suction temperature below the recommended maximum temperature published by the compressor manufacturer. When the hot gas is bypassed directly into the suction line, an auxiliary desuperheating TEV may be required. See Bulletin 90-40 and 90-40-1 for complete application details.

## Selection and Capacity Ratings

The capacities given in the table below are **valve** hot gas capacities and not the capacities of the system on which the valve is to be applied. To select a valve, first determine the compressor capacity at the minimum allowable evaporating temperature. Then the discharge bypass valve must supply the difference between this compressor capacity and the minimum evaporator load at which the system is to be operated. The valve pressure setting will be that pressure at which the bypass valve must start to open.

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## Valve Nomenclature/Ordering Instructions

### Direct Acting Valves

A	DR	H	E	6	0/80	AR	7/8" ODF
Fully Adjustable 0/30 or 0/80 psig or 0/55 psig (ADRI)	Valve Type Discharge Regulating	Body Style I, S, P, or H	External Equalizer Omit if Internally Equalized	Port Size in Eighths of an Inch	Adjustable Range 0/30, 0/80, 55/70, etc	Adjustable Remote Bulb	Connections Solder or SAE Flare

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

### Specifications & Materials/Details of Construction

Valve Type	ADRI, ADRS, ADRP,	DRHE, ADRHE
Body Material	Brass	
Seat	Metal to Metal	Synthetic to Metal
Element to Body Joint Type	Knife Edge Metal to Metal	
Connections	ODF Copper, SAE Brass	
Element Type	Stainless Steel Diaphragm	
MRP	34.5 barg (500 psig)	
Max External Leakage	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
UL	SA5460	
Compatibility	All HFC, HCFC, Refrigerants and blends	

### Pilot Operated Valves

S	HGB	E	- 8	- 0/100	- 7/8"
Solenoid Stop Feature	Valve Type Hot Gas Bypass	External Equalize 1/4" SAE Omit if Internally Equalized	Valve Size	Adjustment Range psi	Connections ODF Solder 7/8" ODF 1-1/8" ODF

### Specifications & Materials/Details of Construction

Valve Type	SHGB-8, SHGBE-8	SHGB-15, SHGB-15
Body Material	Brass	Cast Steel
Seat	Synthetic to Metal	
Connections	ODF Copper	
Coil	MKC-1	MKC-2
MRP	33 barg (450 psig)	
MOPD	20.7 bar (300 psi)	
Max. Fluid Temp.	116°C (240°F)	
Max. Ambient Temp.	48.9°C (120°F)	
Max External Leakage	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
UL	MH4576	
Compatibility	All HFC, HCFC, Refrigerants and blends	

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## Selection Tables

### Capacities in kW

Capacities based on 3.3°C evaporator temperature change from closed to rated opening (does not apply to pilot operated models), discharge temperature 17°C above isentropic compression, 38°C condensing temperature, 0°C subcooling, 14°K superheat at the compressor and includes both the hot gas bypassed and liquid refrigerant for desuperheating, regardless of whether the liquid is fed through the system thermostatic expansion valve or auxiliary desuperheating thermostatic expansion valve.

Refrigerant	Minimum Allowable Evaporator Temp. °C	Valve Type & Adjustment Range bar														
		ADRI-1-1/4 ADRIE-1-1/4			ADRS-2		ADRP-3		ADRHE-6		DRHE-6 (Adjustable "Remote Bulb" Model)*				SHGB-8 SGHBE-8	SHGB-15 SGHBE-15
		0/3.79	0/5.17	0/6.90	0/2.07	0/5.52	0/2.07	0/5.52	0/2.07	0/5.52	1.72/2.41	2.21/3.03	3.79/4.83	4.48/5.52	0/6.90	0/5.17
22	5	-	2.04	1.86	-	12.3	-	21.1	-	32.2	-	-	69.7	-	55.3	204
	-5	1.55	2.25	1.90	-	12.5	-	22.0	-	34.8	-	-	59.5	-	56.0	218
	-15	2.22	2.11	1.72	13.7	12.9	26.0	23.2	48.9	38.3	-	-	-	-	57.0	232
	-25	2.08	1.76	1.55	13.2	12.8	26.2	23.4	49.6	38.7	-	-	-	-	57.0	243
134a	5	1.41	1.51	1.19	-	9.40	-	17.4	-	32.9	33.9	-	-	-	38.3	144
	-5	1.44	1.37	1.12	9.15	8.59	17.4	15.5	32.9	25.5	29.2	-	-	-	38.3	151
	-15	1.34	1.09	0.98	8.66	-	17.2	-	33.1	-	-	-	-	-	38.7	162
404A	5	-	-	1.94	-	-	-	-	-	-	-	-	-	-	61.6	-
	-5	-	2.36	2.11	-	13.7	-	23.6	-	36.6	-	-	-	75.3	62.3	225
	-15	2.35	2.50	1.97	-	14.1	-	25.2	-	41.2	-	-	-	-	63.0	229
	-25	2.39	2.15	1.79	14.7	14.1	28.4	25.6	53.8	42.6	-	-	-	-	63.0	229
407C	5	-	2.74	2.29	-	14.9	-	26.4	-	42.6	-	-	80.5	-	65.4	260
	-5	2.15	2.74	2.22	-	14.9	-	26.4	-	42.6	-	67.9	-	-	65.8	264
	-15	2.60	2.39	1.97	15.9	15.2	30.4	27.5	57.3	45.7	-	-	-	-	66.5	267
	-25	2.39	1.97	1.76	15.2	14.9	30.4	27.1	58.0	45.4	-	-	-	-	67.2	271
507	5	-	-	1.86	-	-	-	-	-	-	-	-	-	-	61.2	-
	-5	-	2.28	2.07	-	13.6	-	23.2	-	35.9	-	-	-	-	62.3	225
	-15	-	2.50	2.00	-	13.8	-	24.9	-	40.5	-	-	-	-	62.6	225
	-25	2.43	2.18	1.83	14.7	14.1	28.2	25.5	53.5	42.2	-	-	-	-	63.0	229

\* These models applicable on air conditioning systems only.

## R410A

### Direct Acting

Specifications & Materials / Details of Construction

Valve Type	HGBE
Body Material	Brass
Seat	Synthetic to Metal
Connections	ODF Copper
MRP	48.3 barg (700 psig)
Max. Fluid Temp.	116°C (240°F)
Max. Ambient Temp.	48.9°C (120°F)
Max External Leakage	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)
UL	SA-5460-SFJQ2
Compatibility	All HFC Refrigerants and blends

### Pilot Operated Valves

Specifications & Materials/Details of Construction

Valve Type	HGB(E)
Body Material	Brass
Seat	Synthetic to Metal
Connections	ODF Copper
MRP	48.3 barg (700 psig)
Max. Fluid Temp.	116°C (240°F)
Max. Ambient Temp.	48.9°C (120°F)
Max External Leakage	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)
UL	SA-5460-SFJQ2
Compatibility	All HFC Refrigerants and blends

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## Selection Tables

### R410A

#### Capacity Multipliers kW / bar / °C

For evaporator temperature changes other than 3.3°C nominal change.

Evaporator Temperature Change °C	Evaporator Temperature °C		
	5	-3	-10
1	0.41	0.35	0.31
2	0.77	0.72	0.67
3	0.96	0.95	0.94
4	1.05	1.08	1.10
5	1.09	1.14	1.20
6	1.11	1.18	1.25

#### Direct Acting Discharge Bypass Valve Capacities - kW / bar / °C

Valve Type	Adjustment Range bar	Minimum Allowable Evaporator Temperature at Reduced Load °C								
		5			-3			-10		
		Condensing Temperature °C								
		30	40	50	30	40	50	30	40	50
HGBE-5	6.6/7.93	16.2	20.0	24.2	16.2	20.1	24.3	16.3	20.2	24.5

#### Pilot Operated Discharge Bypass Valve Capacities

Valve Type	Adjustment Range bar	Minimum Allowable Evaporator Temperature at Reduced Load °C								
		5			-3			-10		
		Condensing Temperature °C								
		30	40	50	30	40	50	30	40	50
HGB-8	5.2/10.3	72.5	92.6	114	75.5	94.5	115	76.9	95.3	116
HGBE-8										

Capacities based on discharge temperatures 28°C above isentropic compression, 14°C superheat at the compressor, 5°C subcooling, and includes both the hot gas bypassed and liquid refrigerant for desuperheating, regardless of whether the liquid is fed through the system thermostatic expansion valves or an auxiliary desuperheating thermostatic expansion valve.

For example, an HGBE-5 rated for 20.1 kW at a -3°C evaporating temperature will start to open at 0.3°C (-3°C + 3.3°C); and when the evaporating temperature has dropped to -3°C, the valve will be open far enough to bypass 20.1 kW of hot gas.

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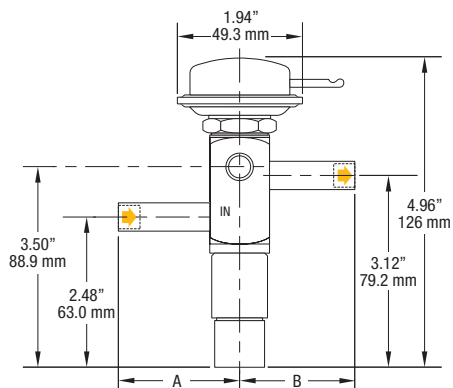
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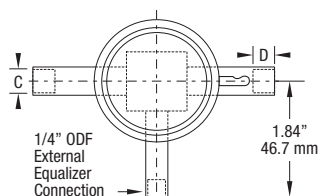


## Valve Dimensions

### HGBE-5



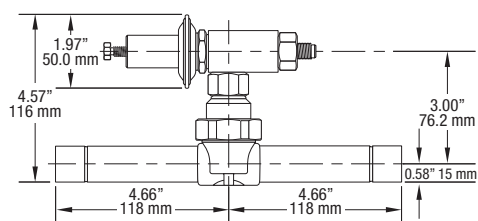
### Top View



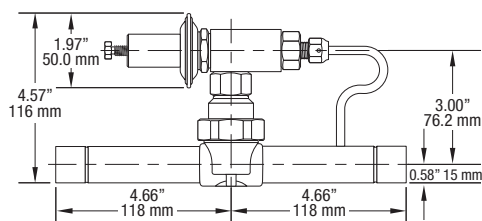
## Connections

ODF Solder Inches	Inches				mm			
	A	B	C	D	A	B	C	D
3/8	1.87	1.78	0.38	0.31	47.5	45.2	9.65	7.9
1/2	2.12	2.03	0.50	0.37	53.8	51.6	12.7	9.4
5/8	2.43	2.34	0.63	0.50	61.7	59.4	16.0	12.7

### HGBE-8 Externally Equalized



### HGBE-8 Internally Equalized



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## Order Selection Guide

### Direct Acting Valves - Adjustable Models

Type	Connections Inches	Adjustment Range psig	Adjustment Range barg	Part Number
ADRI-1-1/4 (straight through)	3/8 ODF	0/55	0/3.79	904927
	3/8 ODF	0/75	0/5.17	905767
	3/8 ODF	0/100	0/6.9	906607
ADRIE-1-1/4 (straight through)	3/8 ODF	0/55	0/3.79	905011
	3/8 ODF	0/75	0/5.17	905851
	3/8 ODF	0/100	0/6.9	906691
ADRS-2	3/8 ODF, 1/2 ODF, 5/8 ODF	0/30, 0/80	0/2.07, 0/5.52	Special order valve
	3/8 ODF, 1/2 ODF, 5/8 ODF	0/30	0/2.07	Special order valve
ADRSE-2	3/8 ODF			903399
	1/2 ODF	0/80	0/5.52	903406
	5/8 ODF			903413
ADRP-3	1/2 ODF	0/30, 0/80	0/2.07, 0/5.52	Special order valve
	5/8 ODF			
ADRPE-3	1/2 ODF, 5/8 ODF	0/30	0/2.07	
	1/2 ODF	0/80	0/5.52	903525
	5/8 ODF			903532
ADRHE-6	5/8 ODF			903553
	7/8 ODF	0/30	0/2.07	903560
	1-1/8 ODF			903567
	5/8 ODF			903574
	7/8 ODF	0/80	0/5.52	903581
	1-1/8 ODF			903588

### Direct Acting Valves - With Adjustable Remote Bulb

DRP-3-AR	5/8 ODF	55/70	3.79/4.83	903684
DRPE-3-AR				903686
DRHE-6-AR	7/8 ODF	25/35	1.72/2.41	903742
	1-1/8 ODF			903749
	7/8 ODF	55/70	3.79/4.83	903805
	1-1/8 ODF			903812
	7/8 ODF	65/80	4.48/5.52	903826
1-1/8 ODF	903833			

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## Order Selection Guide

### Pilot Operated \*

Type	Connections Inches	Adjustment Range psig	Adjustment Range barg	Coil Type Required	Part Number
HGBE-8	7/8 ODF	75/150		-	904062
SHGB-8	7/8 ODF	0/100	0/6.9	MKC-1	904015
	1-1/8 ODF				904016
SHGBE-8	7/8 ODF	0/75	0/5.17	MKC-2	904010
	1-1/8 ODF				904009
SHGB-15	1-1/8 ODF	0/75	0/5.17	MKC-2	904075
	1-3/8 ODF				904076
SHGBE-15	1-1/8 ODF	0/75	0/5.17	MKC-2	904077
	1-3/8 ODF				904078

### Adjustable Spring R-410A Models

HGBE-5	3/8 ODF	95/115	6.6/7.93	-	904065
	1/2 ODF				904068
	5/8 ODF				904067
HGB-5	3/8 ODF, 1/2 ODF, 5/8 ODF	95/115	6.6/7.93	-	Special order valve

### Pilot Operated R-410A Models

HGBE-8	7/8 ODF	75/150	5.2/10.3	-	Special order valve
	1-1/8 ODF				904080
HGB-8	7/8 ODF	75/150	5.2/10.3	-	Special order valve
	1-1/8 ODF				

\*All PRV's are supplied less coil.

### Din Coils

Part Number	Type	Power	Electrical Connections
310683	MKC-1E 24/50-60	10 W	DIN connector (not included)
310678	MKC-1E 120/50-60	10 W	DIN connector (not included)
310679	MKC-1E 220-240/50	10 W	DIN connector (not included)
310682	MKC-1E 208-240/50-60	10 W	DIN connector (not included)
310675	MKC-2E 24V 50-60HZ	15W	DIN connector (not included)
310677	MKC-2E 120/50-60	15W	DIN connector (not included)
310681	MKC-2E 220-240/50	15W	DIN connector (not included)
310674	MKC-2E 208-240/50-60	15W	DIN connector (not included)
310040	MKC-1E 12 DC	15W	DIN connector (not included)
310041	MKC-1E 24 DC	15W	DIN connector (not included)
310691	MKC-2E 24 DC	18W	DIN connector (not included)
600000R	PG 9/11 DIN connector for MKC-1E and MKC-2E coils		

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# Crankcase Pressure Regulating Valves

**Crankcase Pressure Regulating Valves** are designed to prevent overloading of the compressor motor by limiting the crankcase pressure to a predetermined maximum value during and after a defrost cycle or a normal shutdown period.

These valves automatically throttle the vapour flow from the evaporator until the compressor can handle the load. Parker Sporlan manufactures five adjustable direct acting models...CRO-4, CRO-6, CROT-6, CRO-10 and CROT-10... all models respond only to their outlet pressure and modulate to prevent the suction pressure at the compressor from rising above the valve setting. Since these valves are adjustable, the setting may be altered to suit the specific system requirements.



## Selection and Capacity Ratings

The ratings for these valves vary depending on these items: design suction pressure after pulldown, maximum allowable suction pressure recommended by the compressor or unit manufacturer (this is the valve setting), and pressure drop across the valve. The difference between the design suction pressure and the valve setting determines how much of the valve stroke is used. Therefore, the valve setting should be kept as high as possible without exceeding the recommendation of the compressor or unit manufacturer. Once this information is available, the correct CRO can be selected from the data below.

## Installation

**Crankcase Pressure Regulating Valves** are installed in the suction line between the evaporator and compressor, and downstream of any other controls or accessories. When installing CRO's with solder type connections, the internal parts should be protected by wrapping the valve with a wet cloth.

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## Valve Nomenclature/Ordering Instructions

CRO	T	10	0/60	1-1/8 ODF
<b>Valve Type</b> Close on rise of outlet pressure	<b>Access Valve on Inlet Connection</b> CROT-6 or CROT-10	<b>Port Size</b> in Eighths of an Inch	<b>Adjustment Range - psig</b> See specifications for available adjustment ranges	<b>Connection</b> ODF Solder or SAE Flare

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

## Materials and Construction Details

Valve Type	CRO-4	CRO(T)-6	CRO(T)-10
<b>Body Material</b>	Brass	Brass	
<b>Seat</b>	Teflon to Metal	Teflon to Metal	
<b>Element Type and Material</b>	Diaphragm - Stainless Steel	Bellows - Brass	
<b>Type of Joints</b>	Knife Edge, Metal to Metal	Hermetic Construction	
<b>Connections</b>	ODF Copper	ODF Copper, SAE Brass	ODF Copper
<b>MRP</b>	34.5 barg (500 psig)	27.6 barg (400 psig)	
<b>Max External Leakage</b>	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)		
<b>UL</b>	SA-5460		
<b>Compatibility</b>	All HFC, HCFC, Refrigerants and blends		

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## Selection Tables

### Capacities in kW

Capacities based on 38°C condensing temperature, 6°K superheat, 0°C subcooling and 0.14 bar pressure drop across valve.

Type and Adjustment Range	Design Evap. Temp. °C	Saturated Suction Pressure bar (Reference)	R-404A						Design Evap. Temp. °C	Saturated Suction Pressure bar (Reference)	R-407C					
			Valve Setting - barg								Valve Setting - barg					
			0.7	1.4	2.1	2.8	3.5	4.2			0.7	1.4	2.1	2.8	3.5	4.2
CRO-4 0/20 psig 0/1.4 barg	-40	0.3	0.41	0.47	-	-	-	-	-40	-0.15	-	-	-	-	-	-
	-35	0.6	0.35	0.55	-	-	-	-	-35	0.1	0.57	0.57	-	-	-	-
	-30	1.0	-	0.55	-	-	-	-	-30	0.4	0.55	0.67	-	-	-	-
	-25	1.5	-	-	-	-	-	-	-25	0.7	-	0.77	-	-	-	-
CRO-4 0/50 psig 0/3.4 barg	-40	0.3	0.34	0.44	0.47	0.47	-	-	-35	0.1	0.45	0.57	0.57	0.57	-	-
	-30	1.0	-	0.46	0.59	0.64	-	-	-30	0.4	0.47	0.61	0.67	0.67	-	-
	-25	1.5	-	-	0.58	0.73	-	-	-25	0.7	-	0.63	0.77	0.77	-	-
	-15	2.6	-	-	-	0.64	-	-	-15	1.6	-	-	0.77	0.98	-	-
CRO-4 0/75 psig 0/5.2 barg	-40	0.3	0.33	0.41	0.47	0.47	0.47	0.47	-35	0.1	0.42	0.52	0.57	0.57	0.57	0.57
	-30	1.0	-	0.45	0.55	0.64	0.64	0.64	-30	0.4	0.45	0.57	0.67	0.67	0.67	0.67
	-15	2.6	-	-	-	0.63	0.78	0.93	-15	1.6	-	-	0.74	0.90	1.00	1.00
	-10	3.3	-	-	-	-	0.71	0.88	-10	2.2	-	-	-	0.87	1.06	1.13
CRO(T)-6 0/60 psig 0/4.1 barg	-40	0.3	1.00	1.70	2.39	3.09	3.29	-	-35	0.1	1.47	2.33	3.19	3.99	3.99	-
	-30	1.0	-	1.40	2.31	3.23	4.14	-	-30	0.4	-	2.34	3.32	4.30	4.64	-
	-20	2.0	-	-	-	2.57	3.75	-	-15	1.6	-	-	2.54	3.96	5.37	-
	-10	3.3	-	-	-	-	-	-	-5	2.8	-	-	-	-	3.78	-
CRO(T)-10 0/60 psig 0/4.1 barg	-40	0.3	2.33	6.67	7.47	7.47	7.47	-	-35	0.1	4.71	9.17	9.17	9.17	9.17	-
	-30	1.0	-	2.97	8.67	9.86	9.86	-	-30	0.4	-	9.03	10.5	10.5	10.5	-
	-20	2.0	-	-	-	8.23	12.7	-	-15	1.6	-	-	6.61	15.3	15.3	-
	-10	3.3	-	-	-	-	-	-	-5	2.8	-	-	-	-	11.5	-
CRO(T)-6 30/110 psig 2.1/7.6 barg			Valve Setting - barg								Valve Setting - barg					
			2.7	3.4	4.1	4.8	5.5	6.2			2.7	3.4	4.1	4.8	5.5	6.2
	-15	2.6	1.54	2.43	3.32	4.21	5.09	5.98	-10	2.2	2.57	4.58	6.16	7.74	7.78	7.78
	-10	3.3	-	-	2.75	3.75	4.74	5.74	-5	2.8	-	3.01	4.19	5.38	6.57	7.75
	-5	4.1	-	-	-	2.94	4.05	5.16	0	3.6	-	-	3.31	4.62	5.94	7.26
0	5.0	-	-	-	-	2.94	4.17	5	4.5	-	-	-	3.39	4.85	6.30	
CRO(T)-10 30/110 psig 2.1/7.6 barg	-15	2.6	-	6.21	11.8	14.3	14.3	14.3	-10	2.2	5.47	17.1	17.1	17.1	17.1	17.1
	-10	3.3	-	-	6.98	13.2	16.0	16.0	-5	2.8	-	6.74	14.2	19.1	19.1	19.1
	-5	4.1	-	-	-	6.85	13.8	17.9	0	3.6	-	-	7.04	15.3	21.2	21.2
	0	5.0	-	-	-	-	5.41	13.1	5	4.5	-	-	-	5.91	15.1	23.5

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## Selection Tables

### Capacities in kW

Capacities based on 38°C condensing temperature, 6°K superheat, 0°C subcooling and 0.14 bar pressure drop across valve.

Type and Adjustment Range	Design Evap. Temp. °C	Saturated Suction Pressure bar (Reference)	R-22						Design Evap. Temp. °C	Saturated Suction Pressure bar (Reference)	R-134a					
			Valve Setting - barg								Valve Setting - barg					
			0.7	1.4	2.1	2.8	3.5	4.2			0.7	1.4	2.1	2.8	3.5	4.2
CRO-4 0/20 psig 0/1.4 barg	-40	0.0	0.61	0.61	-	-	-	-	-25	0.0	0.59	0.59	-	-	-	-
	-35	0.3	0.61	0.70	-	-	-	-	-20	0.3	0.59	0.69	-	-	-	-
	-30	0.6	0.53	0.80	-	-	-	-	-15	0.6	0.52	0.79	-	-	-	-
	-25	1.0	-	-	-	-	-	-	-10	1.0	-	0.79	-	-	-	-
CRO-4 0/50 psig 0/3.4 barg	-40	0.0	0.48	0.61	0.61	0.61	-	-	-20	0.3	0.49	0.64	0.69	0.69	-	-
	-30	0.6	0.50	0.67	0.80	0.80	-	-	-15	0.6	0.49	0.66	0.79	0.79	-	-
	-25	1.0	-	0.66	0.85	0.91	-	-	-5	1.4	-	-	0.83	1.02	-	-
	-15	1.9	-	-	0.76	0.99	-	-	5	2.5	-	-	-	0.91	-	-
CRO-4 0/75 psig 0/5.2 barg	-40	0.0	0.46	0.48	0.61	0.61	0.61	0.61	-15	0.6	0.49	0.62	0.76	0.79	0.79	0.79
	-30	0.6	0.50	0.64	0.77	0.80	0.80	0.80	-10	1.0	-	0.64	0.78	0.90	0.90	0.90
	-15	1.9	-	-	0.75	0.93	1.12	1.14	-5	1.4	-	-	0.79	0.95	1.02	1.02
	-10	2.5	-	-	-	0.86	1.07	1.27	5	2.5	-	-	-	0.89	1.10	1.28
CRO(T)-6 0/60 psig 0/4.1 barg	-40	0.0	1.62	2.54	3.45	4.27	4.27	-	-15	0.6	1.21	2.35	3.50	4.65	5.49	-
	-30	0.6	-	2.41	3.57	4.73	5.58	-	-10	1.0	-	2.03	3.32	4.61	5.90	-
	-15	1.9	-	-	2.07	3.67	5.27	-	-5	1.4	-	-	2.90	4.34	5.79	-
	-5	3.2	-	-	-	-	2.99	-	5	2.5	-	-	-	-	4.55	-
CRO(T)-10 0/60 psig 0/4.1 barg	-40	0.0	5.29	9.79	9.79	9.79	9.79	-	-15	0.6	-	7.83	12.3	12.3	12.3	-
	-30	0.6	-	7.95	12.5	12.5	12.5	-	-10	1.0	-	4.63	12.7	13.9	13.9	-
	-15	1.9	-	-	2.16	12.1	17.3	-	-5	1.4	-	-	8.72	15.6	15.6	-
	-5	3.2	-	-	-	-	5.13	-	5	2.5	-	-	-	-	16.2	-
			Valve Setting - barg								Valve Setting - barg					
			2.7	3.4	4.1	4.8	5.5	6.2			2.7	3.4	4.1	4.8	5.5	6.2
CRO(T)-6 30/110 psig 2.1/7.6 barg	-10	2.5	2.22	3.41	4.60	5.79	6.98	8.17	-10	1.0	3.40	4.27	5.14	6.00	6.24	6.24
	-5	3.2	-	2.53	3.84	5.15	6.46	7.76	-5	1.4	-	4.24	5.21	6.19	7.05	7.05
	0	4.0	-	-	2.68	4.11	5.55	6.98	0	1.9	-	-	5.10	6.18	7.27	7.91
	5	4.8	-	-	-	-	4.16	5.73	5	2.5	-	-	-	5.94	7.14	8.35
CRO(T)-10 30/110 psig 2.1/7.6 barg	-10	2.5	1.78	9.24	16.7	19.1	19.1	19.1	-10	1.0	13.2	13.9	13.9	13.9	13.9	13.9
	-5	3.2	-	2.31	10.5	18.7	21.1	21.1	-5	1.4	-	15.6	15.6	15.6	15.6	15.6
	0	4.0	-	-	1.75	10.7	19.7	23.1	0	1.9	-	-	17.4	17.4	17.4	17.4
	5	4.8	-	-	-	-	9.48	19.3	5	2.5	-	-	-	19.4	19.4	19.4

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## Selection Tables

### Capacities in kW

Capacities based on 38°C condensing temperature, 6°K superheat, 0°C subcooling and 0.14 bar pressure drop across valve.

Type and Adjustment Range	Design Evap. Temp. °C	Saturated Suction Pressure bar (Reference)	R-409A						Design Evap. Temp. °C	Saturated Suction Pressure bar (Reference)	R-507						
			Valve Setting - barg								Valve Setting - barg						
			0.7	1.4	2.1	2.8	3.5	4.2			0.7	1.4	2.1	2.8	3.5	4.2	
CRO-4 0/20 psig 0/1.4 barg	-25	0.0	0.60	0.60	-	-	-	-	-25	0.4	0.39	0.47	-	-	-	-	
	-20	0.3	0.61	0.70	-	-	-	-	-20	0.7	-	0.55	-	-	-	-	
	-15	0.6	0.54	0.80	-	-	-	-	-15	1.1	-	0.50	-	-	-	-	
	-10	1.0	-	0.82	-	-	-	-	-10	1.6	-	-	-	-	-	-	
CRO-4 0/50 psig 0/3.4 barg	-20	0.3	0.50	0.65	0.70	0.70	-	-	-20	0.4	0.33	0.43	0.47	0.47	-	-	
	-15	0.6	0.51	0.68	0.80	0.80	-	-	-15	1.1	-	0.44	0.57	0.64	-	-	
	-5	1.4	-	-	0.85	1.02	-	-	-5	1.6	-	-	0.55	0.70	-	-	
	5	2.4	-	-	-	0.94	-	-	5	2.8	-	-	-	-	-	-	
CRO-4 0/75 psig 0/5.2 barg	-15	0.6	0.50	0.63	0.77	0.80	0.80	0.80	-15	0.4	0.32	0.40	0.47	0.47	0.47	0.47	
	-10	1.0	-	0.65	0.80	0.90	0.90	0.90	-10	1.1	-	0.43	0.53	0.64	0.64	0.64	
	-5	1.4	-	-	0.80	0.97	1.02	1.02	-5	2.8	-	-	-	-	-	0.73	0.89
	5	2.4	-	-	-	0.91	1.11	1.27	5	3.5	-	-	-	-	0.65	0.82	
CRO(T)-6 0/60 psig 0/4.1 barg	-15	0.6	1.27	2.43	3.58	4.74	5.54	-	-15	0.4	0.94	1.64	2.33	3.02	3.28	-	
	-10	1.0	-	2.12	3.42	4.71	6.00	-	-10	1.1	-	1.27	2.18	3.08	3.99	-	
	-5	1.4	-	-	3.01	4.45	5.89	-	-5	2.1	-	-	-	2.32	3.48	-	
	5	2.4	-	-	-	-	4.74	-	5	3.5	-	-	-	-	-	-	
CRO(T)-10 0/60 psig 0/4.1 barg	-15	0.6	1.02	8.23	12.4	12.4	12.4	-	-15	0.4	1.94	6.25	7.43	7.43	7.43	-	
	-10	1.0	-	5.16	13.2	13.9	13.9	-	-10	1.1	-	2.16	7.81	9.78	9.78	-	
	-5	1.4	-	-	9.47	15.6	15.6	-	-5	2.1	-	-	-	6.66	12.6	-	
	5	2.4	-	-	-	-	17.6	-	5	3.5	-	-	-	-	-	-	
CRO(T)-6 30/110 psig 2.1/7.6 barg	-10	1.0	Valve Setting - barg						-10	2.8	Valve Setting - barg						
	-5	1.4	2.7	3.4	4.1	4.8	5.5	6.2	-5	3.5	2.7	3.4	4.1	4.8	5.5	6.2	
	0	1.9	3.47	4.33	5.20	6.07	6.26	6.26	0	4.3	-	2.20	3.08	3.95	4.83	5.71	
	5	2.4	-	4.31	5.28	6.25	7.03	7.03	5	5.2	-	2.45	3.43	4.41	5.39		
			-	-	5.18	6.25	7.33	7.84			-	-	2.56	3.65	4.74		
CRO(T)-10 30/110 psig 2.1/7.6 barg	-10	1.0	13.6	13.9	13.9	13.9	13.9	13.9	-10	2.8	-	4.81	10.3	14.1	14.1	14.1	
	-5	1.4	-	15.6	15.6	15.6	15.6	15.6	-5	3.5	-	-	5.17	11.3	15.8	15.8	
	0	1.9	-	-	17.3	17.3	17.3	17.3	0	4.3	-	-	-	4.56	11.4	17.6	
	5	2.4	-	-	-	19.1	19.1	19.1	5	5.2	-	-	-	-	2.57	10.2	

6

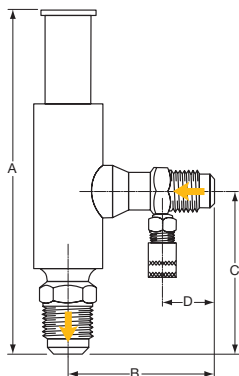
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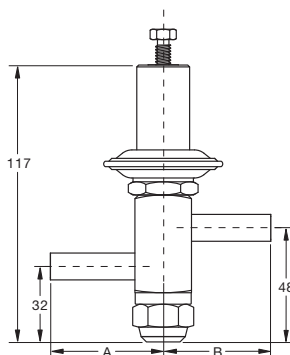


## Valve Dimensions

### CRO (T)-6 CRO (T)-10



### CRO 4



## Specifications & Dimensions

Valve type	Nominal Adjustment Range - psig	Connection - Inches Standard Connection in Bold	Dimensions - Inches					Weight - Pounds	
			A	B	C	D	Socket Depth	Net	Shipping
CRO-4	0/20, 0/50 or 0/75	<b>3/8 ODF Solder</b>	48	45	10	-	8	0.45	0.52
		<b>1/2 ODF Solder</b>	54	52	13	-	9		
		<b>3/8 SAE Flare</b>	42	40	-	-	-		
		<b>1/2 SAE Flare</b>	47	45	-	-	-		
CRO(T)-6	0/60 or 30/110	<b>5/8 ODF Solder</b>	249	134	162	93	13	0.45	0.57
		<b>7/8 ODF Solder</b>	249	134	162	95	19	0.45	0.57
		<b>1-1/8 ODF Solder</b>	249	134	162	95	23	0.57	0.68
		<b>1/2 SAE Flare</b>	157	67	71	24	-	0.45	0.57
		<b>5/8 SAE Flare</b>	162	71	76	27	-	0.45	0.57
CRO(T)-10	0/60 or 30/110	<b>7/8 ODF Solder</b>	280	145	165	83	19	1.1	1.25
		<b>1-1/8 ODF Solder</b>	280	145	165	83	23	1.1	1.25
		<b>1-3/8 ODF Solder</b>	280	145	165	83	25	1.1	1.25

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## Order Selection Guide

### Crankcase Pressure Regulating Valves

Type	Connections Inches	Adjustment Range psig	Adjustment Range barg	Part Number
CRO-4	1/2 ODF	0/20	0/1.38	900002
	1/2 ODF	0/50	0/3.45	900004
	1/2 ODF	0/75	0/5.17	900006
	3/8 ODF, 3/8 SAE, 1/2 SAE	0/20, 0/50, 0/75	0/1.38, 0/3.45, 0/5.17	Special order valve
CRO-6	5/8 ODF	30/110	2.07/7.58	900310
	7/8 ODF			900315
	1-1/8 ODF	0/60	0/4.14	900479
	1/2 SAE			900493
	5/8 SAE			900500
	1/2 SAE, 5/8 SAE, 1/2 ODF, 5/8 ODF, 7/8 ODF, 1-1/8 ODF			0/60, 30/110
CRO-10	7/8 ODF	30/110	2.07/7.58	900330
	1-1/8 ODF			900335
	1-3/8 ODF			900340
	7/8 ODF	0/60	0/4.14	900507
	1-1/8 ODF			900528
	1-3/8 ODF			900542
CROT-6	1/2 SAE	0/60	0/4.14	900584
	5/8 SAE			900591
	1/2 ODF			900553
	5/8 ODF			900556
	7/8 ODF			900570
	1-1/8 ODF			900577
	1/2 SAE	30/110	2.07/7.58	900350
	5/8 SAE			900355
	1/2 ODF			900359
	5/8 ODF			900360
	7/8 ODF			900365
	1-1/8 ODF			900370
CROT-10	7/8 ODF	0/60	0/4.14	900598
	1-1/8 ODF			900605
	1-3/8 ODF			900612
	7/8 ODF	30/110	2.07/7.58	900380
	1-1/8 ODF			900385
	1-3/8 ODF			900390

**Note:** All CRO & CROT valves with ODF connections are supplied with an inlet strainer

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Special order valves or other valves configurations might be available upon request.

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# Head Pressure Control Valves

## High and Low Ambient Stability

The design of air conditioning systems utilizing air cooled condensing units involves two main problems that must be solved if the system is to operate reliably and economically **high ambient** and **low ambient** operation. If the condensing unit is properly sized, it will operate satisfactorily during extremely high ambient temperatures. However, some units will be required to operate at ambient temperatures below their design dry bulb temperature during most of the year, the solution to low ambient operation is more complex.



Without good head pressure control during low ambient operation, the system can experience both running cycle and off-cycle problems. Since the pressure differential across the thermostatic expansion valve port affects the rate of refrigerant flow, low head pressure generally causes insufficient refrigerant to be fed to the evaporator. Failure to have sufficient head pressure will result in low suction pressure and/or iced evaporator coils. The primary off-cycle problem is refrigerant migration to the condenser. Insufficient flow through the TEV will cause a low suction pressure. The typical method of maintaining normal head pressure in a refrigeration system during periods of low ambient temperature is to restrict liquid flow from the condenser to the receiver, and at the same time divert hot gas to the inlet of the receiver. This backs liquid refrigerant up into the condenser reducing its capacity which in turn increases the condensing pressure. At the same time the hot gas raises liquid pressure in the receiver, allowing the system to operate normally. **Parker Sporlan Head Pressure Control** for systems with air cooled condensers can be accomplished using one of several valve options; the non-adjustable OROA-5, the adjustable ORI/ORD combination, or the economical LAC Series.

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## Valve Nomenclature/Ordering Instructions

### LAC

<b>LAC</b>	-	<b>4</b>	-	<b>DS</b>	-	<b>100/80</b>	-	<b>3/8"</b>	X	<b>3/8"</b>	X	<b>3/8"</b>
<b>Valve Type</b> Low Ambient Control		<b>Valve Size</b>		<b>Dual Setting</b> Omit for standard dome element		<b>Valve Setting (s)</b> (psig) - Specify one setting for		<b>Discharge Connection</b> (inches)		<b>Condensed Connection</b> (inches)		<b>Receiver Connection</b> (inches)
<b>LAC</b>	-	<b>5</b>	-	<b>180</b>	-	<b>5/8"</b>	X	<b>5/8"</b>	X	<b>3/8"</b>		<b>ODF</b>
<b>Valve Type</b> Low Ambient Control		<b>Valve Size</b>		<b>Valve Setting(s)</b> (psig)		<b>Discharge Connection</b> (inches)		<b>Condensed Connection</b> (inches)		<b>Receiver Connection</b> (inches)		<b>Solder Connections</b>

### ORI

<b>ORI</b>	-	<b>6</b>	-	<b>65/225</b>	-	<b>7/8" ODF</b>	-	<b>With Strainer</b>	-	<b>H</b>
<b>Valve Type</b> Open on rise of Inlet Pressure		<b>Port Size</b> Eighths of an Inch		<b>Nominal Adjustment Range</b> (psig)		<b>Connection Solder</b>		<b>Inlet Strainer</b> (Optional)		<b>Designates High Pressure Bellows</b>

### OROA

<b>OROA</b>	-	<b>5</b>	-	<b>180</b>	-	<b>5/8" ODF</b>	-	<b>With Strainer</b>
<b>Valve Type</b> Open on rise of Outlet		<b>Port Size</b> Eighths of an Inch		<b>Pressure Setting</b> (psig)		<b>Connection Solder</b>		<b>Inlet Strainer</b> (Optional)

### ORD-4

<b>ORD</b>	-	<b>4</b>	-	<b>20</b>
<b>Valve Type</b> Open on rise of Differential Pressure		<b>Port Size</b> Eighths of an Inch		<b>Opening Pressure Differential</b> (psi)

### Materials and Construction Details

Valve Type	LAC-4,-5,-10		ORI-6,-10	ORD-4	OROA
<b>Body Material</b>	Brass		Brass	Copper	Brass
<b>Seat</b>	Metal to Metal		Metal to Metal	Metal to Metal	Metal to Metal
<b>Element Type and Material</b>	Domed Steel	Remote Bulb only for R410A LAC-5-HP, -10-HP valves	Bellows - Brass	Bellows - Brass	Diaphragm Stainless Steel
<b>Type of Joints</b>	Knife Edge, Metal to Metal		Hermetic Construction	Hermetic Construction	Hermetic Construction
<b>Connections</b>	ODF Copper		ODF Copper	ODF Copper	ODF Copper
<b>MRP</b>	46.9 barg (680 psig) R410A only		31 barg (450 psig)	31 barg (450 psig)	31 barg (450 psig)
	LAC-4 =34.5 barg (500 psig)	LAC-5, -10 = 31 barg (450 psig)			
<b>Max External Leakage</b>	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)				
<b>UL</b>	SA-5460				
<b>Compatibility</b>	All HFC, HCFC, Refrigerants and blends				

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

## Selection Tables

### Low Ambient Capacities - kW of Refrigeration

Capacities are based on -20°C evaporator temperature, 35°C condenser, 6°C subcooled liquid.

Refrigerant Valve Setting barg	Minimum Ambient Design Temp. °C	Pressure Drop Across Valve bar	Valve Type				
			LAC-4	LAC-5	LAC-10	OROA-5	ORD-4
22 407C (12.4 barg)	-30	0.07	5.96	10.6	25.4	-	-
		0.14	8.38	14.9	35.7	-	-
		0.35	13.1	23.6	55.5	-	-
		1.6	26.9	49.6	112	54.4	54.4
		2	29.8	55.2	123	83.3	83.3
	-20	0.07	6.38	11.3	27.1	-	-
		0.14	8.97	16	38	-	-
		0.35	14	25.2	59.1	-	-
		1.6	28.8	53	119	61.3	61.3
		2	31.8	59	131	93.8	93.8
	-10	0.07	6.91	12.2	29.2	-	-
		0.14	9.71	17.2	40.8	-	-
		0.35	15.2	27.2	63.5	-	-
		1.6	31.1	57.2	127	71.2	71.2
		2	34.3	63.7	140	109	109
134a (6.9 barg)	-30	0.07	4.86	8.65	20.9	-	-
		0.14	6.83	12.2	29.2	-	-
		0.35	10.7	19.2	45.4	-	-
		1.6	21.4	40.1	88.8	40.6	40.6
		2	23.5	44.5	96.6	62.4	62.4
	-20	0.07	5.24	9.3	22.4	-	-
		0.14	7.36	13.1	31.3	-	-
		0.35	11.5	20.7	48.5	-	-
		1.6	23.1	43.1	94.9	45.7	45.7
		2	25.3	47.8	103	70.2	70.2
	-10	0.07	5.73	10.1	24.3	-	-
		0.14	8.05	14.3	34	-	-
		0.35	12.5	22.6	52.7	-	-
		1.6	25.2	47.1	103	53.3	53.3
		2	27.6	52.2	112	81.8	81.8
R-410A (20.3 barg)	-30	0.07	6.06	10.8	20.3	-	-
		0.14	8.54	15.2	28.5	-	-
		0.35	13.4	24	44.4	-	-
		0.7	18.8	33.9	61.8	-	-
		0.07	6.48	11.5	21.6	-	-
	-20	0.14	9.13	16.2	30.3	-	-
		0.35	14.3	25.6	47.2	-	-
		0.7	20	36.1	65.6	-	-
		0.07	7	12.4	23.2	-	-
		0.14	9.85	17.5	32.5	-	-
	-10	0.35	15.4	27.6	50.6	-	-
		0.7	21.6	38.9	70.4	-	-

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## Selection Tables

### Low Ambient WINTER Capacities - kW of Refrigeration

Capacities are based on -20°C evaporator temperature, 35°C condenser, 6°C subcooled liquid.

Refrigerant Valve Setting barg	Minimum Ambient Design Temp. °C	Pressure Drop Across Valve bar	Valve Type				
			LAC-4	LAC-5	LAC-10	OROA-5	ORD-4
404A (14.5 barg)	-30	0.07	4.37	7.75	18.7	-	-
		0.14	6.15	11.0	26.2	-	-
		0.35	9.63	17.3	40.9	-	-
		1.6	19.9	36.5	83.0	39.5	39.5
		2	22.0	40.6	91.5	60.4	60.4
	-20	0.07	4.64	8.2	19.7	-	-
		0.14	9.52	11.6	27.7	-	-
		0.35	10.2	18.3	43.1	-	-
		1.6	21.1	38.6	87.4	44	44
		2	23.3	43.0	96.3	67.4	67.4
	-10	0.07	4.98	8.78	21.1	-	-
		0.14	7.00	12.4	29.5	-	-
		0.35	10.9	19.6	45.9	-	-
		1.6	22.5	41.3	92.9	50.7	50.7
		2	24.9	46.0	102	77.6	77.6
507 (14.5 barg)	-30	0.07	4.12	7.32	17.6	-	-
		0.14	5.8	10.3	24.8	-	-
		0.35	9.10	16.3	38.6	-	-
		1.6	18.8	34.5	78.5	37.2	37.2
		2	20.8	38.4	86.5	57	57
	-20	0.07	4.40	7.79	18.7	-	-
		0.14	6.20	11.0	26.3	-	-
		0.35	9.70	17.4	40.9	-	-
		1.6	20.0	36.7	83.0	41.9	41.9
		2	22.1	40.9	91.5	64.1	64.1
	-10	0.07	4.75	8.38	20.1	-	-
		0.14	6.68	11.8	28.1	-	-
		0.35	10.4	18.7	43.8	-	-
		1.6	21.5	39.5	88.6	48.7	48.7
		2	23.8	43.9	97.6	74.6	74.6

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## Selection Tables

### High Ambient SUMMER Capacities - kW of Refrigeration

Capacities are based on -20°C evaporator temperature, 43°C condenser, 6°C subcooled liquid.

Refrigerant Valve Setting barg	Pressure Drop Across Valve bar	Valve Type						
		LAC-4	LAC-5	LAC-10	OROA-5	ORI-6	ORI-10	ORD-4
22 407C (12.4 barg)	0.07	9.13	19.5	41.5	37	26.0	69.2	
	0.14	12.8	27.6	57.7	52.1	37.8	95.6	-
	0.21	15.5	33.9	69.9	63.7	47.0	116	-
	0.28	17.8	39.1	80.1	73.5	54.9	132	-
	0.35	19.9	43.7	89.0	82.1	61.9	147	-
134a (6.9 barg)	0.07	8.15	17.4	37.1	33	18.2	45.6	-
	0.14	11.4	27.4	51.5	46.5	26.4	63	-
	0.21	13.9	30.2	62.4	56.9	32.9	76.1	-
	0.28	15.9	34.9	71.5	65.6	38.5	87.0	-
	0.35	17.7	39.0	79.5	73.2	43.4	96.5	-
410A (20.3 barg)	0.07	8.7	18.6	29.3	-	-	-	-
	0.14	12.2	26.3	40.7	-	-	-	-
	0.21	14.8	32.2	49.3	-	-	-	-
	0.28	17.0	37.2	56.5	-	-	-	-
	0.35	18.9	41.6	62.8	-	-	-	-

### High Ambient SUMMER Capacities - kW of Refrigeration

Capacities are based on -20°C evaporator temperature, 43°C condenser, 6°C subcooled liquid.

Refrigerant Valve Setting barg	Pressure Drop Across Valve bar	Valve Type						
		LAC-4	LAC-5	LAC-10	OROA-5	ORI-6	ORI-10	ORD-4
404A (14.5 barg)	0.07	5.71	12.2	26.0	23.0	17.5	48.4	-
	0.14	7.98	17.2	36.1	32.5	25.4	66.8	-
	0.21	9.7	21.1	43.8	39.7	31.7	80.7	-
	0.28	11.2	24.4	50.2	45.8	37.0	92.3	-
	0.35	12.4	27.2	55.8	51.2	41.7	102	-
507 (14.5 barg)	0.07	5.58	11.9	25.5	22.6	17.8	49.3	-
	0.14	7.8	16.9	35.3	31.8	25.8	68.1	-
	0.21	9.49	20.7	42.8	38.9	32.1	82.3	-
	0.28	10.9	23.9	49.1	44.9	37.5	94.1	-
	0.35	12.2	26.7	54.5	50.1	42.4	104	-

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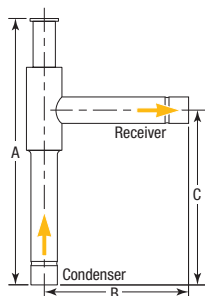
# Valve Dimensions

## Specifications and Dimensions

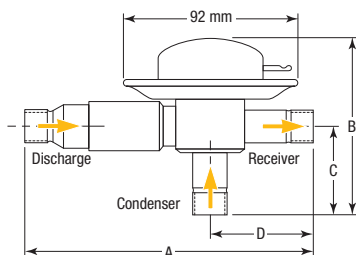
Valve Type	Standard Factory Setting bar	Connections ODF Solder Inches		Dimensions mm								Weight kg		Replacement Parts				
		Inlet(s)	Outlet	A	B	C	D	E	F	G	I	Net	Ship					
ORI-6-65/225-H	8.3	5/8	5/8	250	128	162	-								Inlet Strainer	825-5		
		7/8	7/8													825-7		
		1-1/8	1-1/8													0.57	0.68	825-9
ORI-10-65/225-H	8.3	1-1/8	1-1/8	280	139	167	-									825-9		
		1-3/8	1-3/8													1.13	1.25	825-11
ORD-4-20	1.4	5/8	5/8	167	25	-	-	-	-	-	-	-	-	-	-	0.15	0.23	825-5
OROA-5	6.9, 12.4 or 14.5	(1) 5/8 (2) 5/8	5/8	151	95	48	55									0.91	1.02	825-5
		(1) 5/8 (2) 7/8	7/8	157	102	54	61											825-7

(1) Discharge Connection  
(2) Condenser Connection

### ORI



### OROA



### ORD-4



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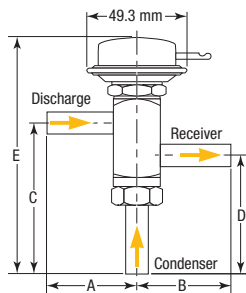
# Valve Dimensions

## Specifications and Dimensions

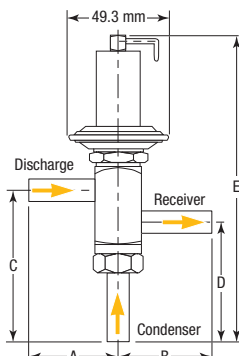
Valve Type	Standard Factory Setting bar	Connections ODF Solder Inches		Dimensions - mm								Weight kg			
		Inlet(s)	Outlet	A	B	C	D	E		F	G	I	Net	Ship	
LAC-4	6.9, 12.4 or 14.5	1/4	1/4	45	48	77	61	120					0.34	0.39	
		3/8	3/8										0.36	0.40	
		1/2	1/2										0.37	0.41	
LAC-4-DS		3/8	3/8	45	48	77	61	155					0.40	0.46	
		1/2	1/2										0.43	.49	
LAC-5		1/2	1/2	42	41	96	76	Dome Element	155	Bulb Element	142			1.13	1.20
		5/8	5/8	44	43	98	78		157		144			1.16	1.22
		7/8	7/8	57	55	110	91		170		157			1.18	1.25
		1-1/8	1-1/8	61	60	114	95		173		161			1.25	1.32
LAC-10	(1) 1-3/8 (2) 7/8	7/8	72	68	112	88	Dome Element	176	Bulb Element	163			1.45	1.55	
	(1) 1-3/8 (2) 1-1/8							1-1/8		65			123	98	187

(1) Discharge Connection  
(2) Condenser Connection

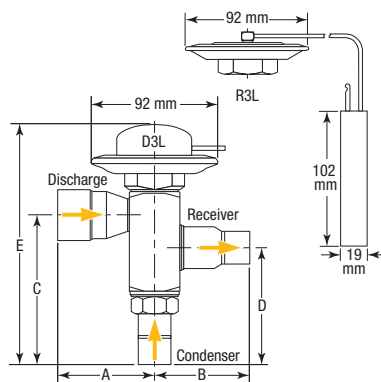
### LAC-4



### LAC-4-DS



### LAC-5 & 10



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## Order Selection Guide

### Head Pressure Control Valves

Valve Type	Connections - Inches		Standard Factory Setting psig	Standard Factory Setting barg	Part Number
	Discharge	Condenser/Receiver			
LAC-4	3/8 ODF	3/8 ODF	100	6.9	903017
	1/2 ODF	1/2 ODF			903031
	3/8 ODF	3/8 ODF	180	12.4	903024
	1/2 ODF	1/2 ODF			903038
LAC-4-DS	3/8 ODF	3/8 ODF	100/180	6.9/12.4	903080
	1/2 ODF	1/2 ODF			903085
LAC-4-HP	1/2 ODF	1/2 ODF	295	20.3	903111
	5/8 ODF	5/8 ODF	180	12.4	903029
LAC-5	7/8 ODF	7/8 ODF	180	12.4	903033
	1/2 x 1/2 ODF,		100, 180	6.9/12.4	Special order valve
	5/8 x 5/8 ODF,				
	7/8 x 7/8 ODF,				
1-1/8 x 1-1/8 ODF					
LAC-5-HP	5/8 ODF	5/8 ODF	295	20.3	903107
LAC-10	7/8 x 7/8 ODF,		100, 180	6.9/12.4	Special order valve
	1-3/8 x 1-3/8 ODF				
LAC-10-HP	1-3/8 ODF	7/8 ODF	295	20.3	903106
	1-3/8 ODF	1-1/8 ODF			903109
ORI-6-65/225H	5/8 ODF	5/8 ODF	120	8.3	900826
	7/8 ODF	7/8 ODF			900833
ORI-10-65/225H	1-1/8 ODF	1-1/8 ODF	120	8.3	900847
	1-1/8 ODF	1-1/8 ODF			900861
	1-3/8 ODF	1-3/8 ODF			900882
ORD-4	5/8 ODF	5/8 ODF	20	1.4	902877
			25	1.7	902884
			30	2.07	902891
			35	2.4	902898
OROA-5	5/8 ODF	5/8 ODF	100	6.9	902905
	5/8 ODF	7/8 ODF			902912
	5/8 ODF	5/8 ODF	180	12.4	902919
	5/8 ODF	7/8 ODF			902926
OROAB-5	5/8 ODF	5/8 ODF	100	6.9	902933
	5/8 ODF	7/8 ODF			902940
	5/8 ODF	5/8 ODF	180	12.4	902947
	5/8 ODF	7/8 ODF			902954
OROAC-5 OROAD-5	5/8 x 5/8 ODF, 5/8 x 7/8 ODF		100	6.9	Special order valve
			180	12.4	

6

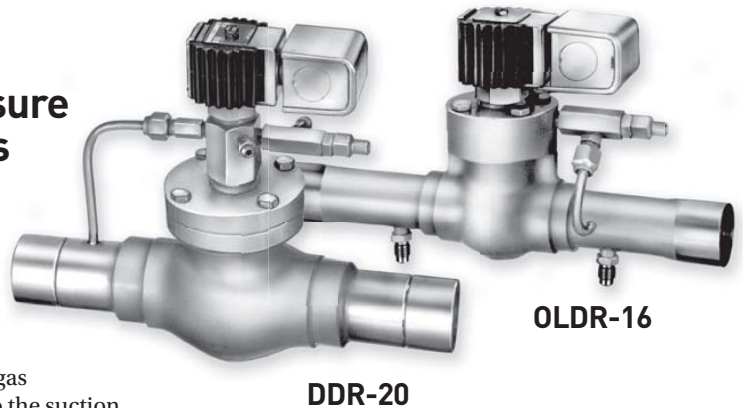
Maximum Pressure Drop Between Compressor and Receiver - bar	Head Pressure Component Selection
Below 0.97	OROA-5-100 or -180
	ORD-4-20 & ORI
1 - 1.3	OROAB-5-100 or -180
	ORD-4-25 & ORI
1.4 - 1.65	OROAC-5-100 or -180
	ORD-4-30 & ORI
1.7 - 2	OROAD-5-100 or -180
	ORD-4-35 & ORI

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## Defrost Differential Pressure Regulating Valves

In many supermarket applications refrigerant gas from the discharge line or from the top of the receiver is used for defrost. This method of defrost diverts a portion of the hot gas or cool gas (from the top of the receiver) to the suction line and back through the evaporator being defrosted.



The gas condenses in the evaporator and flows in reverse, through check valves, around the TEV and liquid line solenoid valve. Liquid refrigerant then flows to the liquid header where it is distributed to evaporators not in the defrost cycle. In order for this reverse flow to occur, the pressure of the defrost header must be greater than the pressure of the liquid header. The difference in pressure is known as the defrost differential.

Several methods are used to obtain the defrost differential. The (O)LDR is designed to maintain a differential pressure between the receiver and the liquid header.

Parker Sporlan liquid line differential valves have a solenoid bypass feature that allows the valve to remain full open or modulate to maintain a differential.

### We supply two versions of liquid line differential valves:

The **OLDR** is in the **full open position** when the coil is de-energized, and it's in differential operation mode when the coil is energized.

The **LDR** is in **differential operation mode** when the coil is de-energized, and it is in the full open position when the coil is energized.

The **DDR-20** is designed to create a differential pressure between its inlet (discharge) pressure and the receiver pressure.

A solenoid bypass feature is incorporated in the valve so that the valve can be made to go full open when there is no need for a differential to be created. Energizing the solenoid coil opens the valve fully.

### Location and Piping

The (O)LDR valves is located between the receiver and the liquid header. The DDR-20 is located in the discharge line before the condenser. The two types of defrost differential valves (liquid line and discharge line) are not to be applied on the same system.

### Adjustment Range and Pressure Settings

All defrost differential valves are set by turning the adjusting stem located under the cap on the pilot differential valve. The adjustment range is 0.3 to 3.5 bar. The (O)LDR has a factory setting of 1.2 bar and the DDR-20 has a factory setting of 2 bar. Turning the stem clockwise increases the setting, counter clockwise decreases the setting.

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## Valve Nomenclature/Ordering Instructions

### OLDR

<b>0</b>	-	<b>LDR</b>	-	<b>16</b>	-	<b>5-50</b>	-	<b>1-3/8" ODF</b>	-	<b>120/50-60</b>
Normally Open		Liquid Differential Regulator		Valve Size		Adjustment Range psl		Connection (Inches)		Electrical Specifications

### DDR

<b>DDR</b>	-	<b>20</b>	-	<b>5/50</b>	-	<b>1-5/8" ODF</b>	-	<b>120/50-60</b>
Discharge Differential Regulator		Valve Size		Adjustment Range psl		Connection (Inches)		Electrical Specifications

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

## Specifications

Valve Type	Port Size mm	Differential Setpoint Range	Connections - Inches Inlet x Outlet	Coil	MRP	MOPD
OLDR-16	25.4	0.34/3.4 bar	1-1/8 ODF x 1-1/8 ODF or 1-3/8 ODF x 1-3/8 ODF	MKC-1	27.5 bar	20.5 bar
LDR-16				OMKC-1		
OLDR-20	33.3	0.34/3.4 bar	1-5/8 ODF x 1-5/8 ODF or 2-1/8 ODF x 2-1/8 ODF	MKC-2	27.5 bar	20.5 bar
LDR-20				OMKC-2		
DDR-20	33.3		1-5/8 ODF x 1-5/8 ODF	MKC-2		

## Selection Tables

### Capacities in kW

Capacities based on 5°C evaporator temperature, 38°C condensing temperature, 14°K superheat return gas, discharge gas temperature 28°C above isentropic compression.

Valve Type	Refrigerant								
	134a			404A & 507			407C		
	Pressure Drop Across Valve - bar								
	0.14	0.21	0.35	0.14	0.21	0.35	0.14	0.21	0.35
LDR-16, OLDR-16	155	190	246	110	135	174	153	187	242
LDR-20, OLDR-20	343	420	543	243	298	384	338	414	534
DDR-20	27	33	42	29	35	45	34	41	53

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## Order Selection Guide

Valve Type*	Connection - Inches Inlet x Outlet	Coil Type Required	Part Number
OLDR-16-5/50	1-1/8 ODF x 1-1/8 ODF	MKC-1	4093-00
	1-3/8 ODF x 1-3/8 ODF		4092-00
OLDR-20-5-50	1-5/8 ODF x 1-5/8 ODF	MKC-2	3941-00
	2-1/8 ODF x 2-1/8 ODF		3942-00
DDR-20-5/50	1-5/8 ODF x 1-5/8 ODF	MKC-2	307105
LDR-16-5/50	1-3/8 ODF x 1-3/8 ODF	OMKC-1	4095-00
LDR-20-5/50	1-5/8 ODF x 1-5/8 ODF	OMKC-2	3890-00
	2-1/8 ODF x 2-1/8 ODF		3891-00

\* All PRV's are supplied less coil.

### DIN Coils

Part Number	Type	Power	Electrical Connections
310683	MKC-1E 24 V / 50-60 Hz	10 W	DIN connector (not included)
310678	MKC-1E 120 V / 50-60 Hz	10 W	DIN connector (not included)
310679	MKC-1E 220-240 V / 50 Hz	10 W	DIN connector (not included)
310682	MKC-1E 208-240 V / 50-60 Hz	10 W	DIN connector (not included)
310040	MKC-1E 12 V DC	15 W	DIN connector (not included)
310041	MKC-1E 24 V DC	15 W	DIN connector (not included)
310675	MKC-2E 24 V / 50-60 Hz	15 W	DIN connector (not included)
310677	MKC-2E 120 V / 50-60 Hz	15 W	DIN connector (not included)
310681	MKC-2E 220-240 V / 50 Hz	15 W	DIN connector (not included)
310674	MKC-2E 208-240 V / 50-60 Hz	15 W	DIN connector (not included)
310688	OMKC-1E 220-240 V / 50 Hz	10 W	DIN connector (not included)
313009	OMKC-2E 120 V / 50-60 Hz	15 W	DIN connector (not included)
313010	OMKC-2E 220-240 V / 50 Hz	15 W	DIN connector (not included)
313012	OMKC-2E 208-240 V / 50-60 Hz	15 W	DIN connector (not included)
600000R	PG 9/11 DIN connector for MKC-1E and MKC-2E coils		

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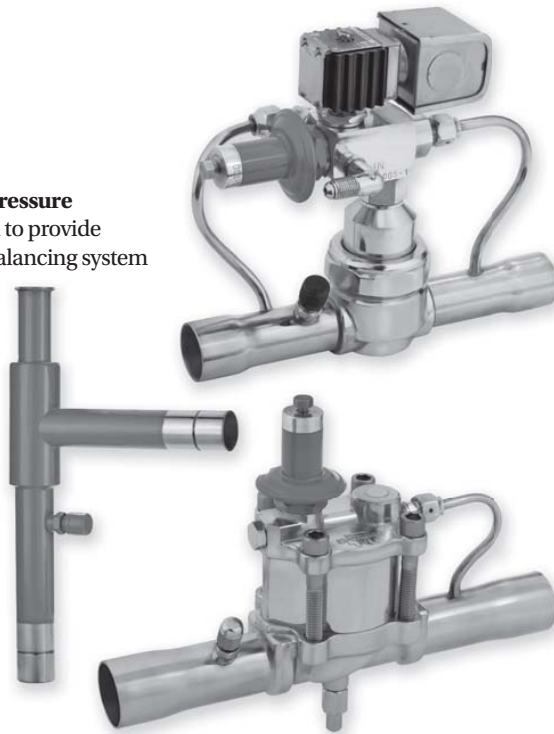
# Evaporator Pressure Regulating Valves

The Parker Sporlan line of **Evaporator Pressure Regulating Valves (EPRV)** are designed to provide an accurate and economical means of balancing system capacity and load requirements during "low" loads and/or while maintaining different evaporator conditions on multitemperature evaporator systems. These valves control evaporator temperature by maintaining evaporator pressure.

As the evaporator load increases the **ORI** valves will **Open on Rise** of **Inlet** pressure above the valve's setting to provide more flow capacity to meet the evaporator load.

When the evaporator load decreases the valves will modulate closed to maintain the pressure setting of the valve. Parker Sporlan offers a number of **Evaporator Pressure Regulating Valves** types in various sizes, and with optional features to accommodate almost any application requirements.

For more complete information on any of the **Evaporator Pressure Regulating Valves** types, see your nearest Parker Sporlan Wholesaler.



## Application

- Maintain minimum evaporator temperature to avoid frost on air coils and provide improved humidity control
- Evaporator temperature control for food merchandisers (single and multiple evaporator systems)
- Evaporator temperature control on water chilling units

## Required Sizing Information

- Refrigerant type
- Evaporator design capacity
- Design evaporator temperature or minimum evaporator pressure
- Available pressure drop
- Allowable evaporator pressure change (only applies to direct acting models)

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)

## ORIT-6 & -10 Type

These direct acting valves are offered in two sizes. The direct acting design although economical requires an evaporator pressure change above the minimum evaporator pressure setting to provide the rated flow capacity.



### Benefits

- Direct acting (most economical)
- Adjustable
- Hermetic construction (no gaskets or seals)
- Corrosion resistant construction
- Inlet pressure tap (standard)
- Inlet strainer (standard on ODF models)

## Valve Nomenclature/Ordering Instructions

### ORIT

<b>ORI</b>	-	<b>T</b>	-	<b>6</b>	-	<b>0/50</b>	-	<b>7*8" ODF</b>
<b>Valve Type</b> Open on Rise of Inlet Pressure		<b>Pressure Tap on Inlet Connection</b>		<b>Port Size in Eights of an Inch</b>		<b>Adjustment Range</b> psig*		<b>Connection ODF</b> Solder or SAE Flare

\* Other pressure ranges are available

### Installation

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

### Specifications & Materials/Details of Construction

Valve Type	ORIT-6, -10
<b>Body Material</b>	Bellows - Brass
<b>Seat</b>	Metal to Metal
<b>Connections</b>	ODF Copper or SAE Brass
<b>PS(MWP)</b>	ORIT6: 21 barg (304.5 psig) - ORIT10: 14 barg (103 psig)
<b>Test Pressure</b>	27.6 barg (400 psig)
<b>Max. Fluid Temp.</b>	116°C (240°F)
<b>Max. Ambient Temp.</b>	68.3°C (155°F)
<b>Max External Leakage</b>	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)
<b>UL</b>	SA-5460-SFJQ
<b>Compatibility</b>	All HFC, HCFC Refrigerants and blends

Valve Type	Port Size mm	Adjustment Range	Standard Connections In Bold
ORIT-6	19	0/3.45	<b>1/2 &amp; 5/8 SAE Flare*</b> <b>1/2, 5/8, 7/8 &amp; 1-1/8 ODF Solder</b>
ORIT-10	31	2.07/6.90 bar	<b>7/8, 1-1/8 &amp; 1-3/8 ODF Solder</b>

\*Not available with inlet strainer.

Accurate at the time of going to print.



## Selection Tables

Valves should be selected for the desired maximum variation in evaporator pressure using the capacity multipliers below.

Allowable Evaporator Pressure Change - bar		0.14	0.28	0.41	0.55	0.69	0.83	0.97
Capacity Multiplier	ORIT-6, 10-0/50	0.3	0.6	0.8	1	1.2	1.3	1.4
	ORIT-6, 10-30/100	-	0.2	0.6	0.7	0.9	1	1.1

### Capacities in kW

Capacities based on 38°C condensing temperature, 0°C subcooling, 6°K superheat, 0.55 bar evaporator pressure change for 0/3.45 barg adjustment range, and a 0.83 bar evaporator pressure change for 2.07/6.90 barg adjustment range.

Valve Type	Evaporator Temperature °C	Saturated Pressure - bar (Reference)					Refrigerant														
		Refrigerant					22		134a			404A			407C			507			
		22	134a	404A	407C	507	Pressure Drop Across Valve - bar														
						0.1	0.4	0.7	0.1	0.4	0.7	0.1	0.4	0.7	0.1	0.4	0.7	0.1	0.4	0.7	
ORIT-6	5	4.83	2.48	6.03	4.35	6.32	3.85	7.16	8.75	2.89	5.01	5.60	3.36	6.30	7.78	3.57	6.54	7.87	3.31	6.22	7.70
	-5	3.21	1.42	4.12	2.77	4.34	3.19	5.73	6.73	2.29	3.67	3.77	2.71	4.94	5.90	2.87	5.04	5.75	2.68	4.90	5.90
	-25	1.00	0.05	1.49	0.70	1.61	2.04	3.16	3.19	1.29	1.53	1.53	1.65	2.66	2.74	1.71	2.44	2.44	1.64	2.68	2.80
ORIT-10	5	4.83	2.48	6.03	4.35	6.32	9.45	18.7	24.4	7.25	14.2	18.3	8.23	16.3	21.3	8.79	17.3	22.6	8.08	16.0	21.0
	-5	3.21	1.42	4.12	2.77	4.34	7.88	15.5	20.2	5.83	11.3	14.4	6.69	13.2	17.2	7.13	14.0	18.1	6.59	13.0	16.9
	-25	1.00	0.05	1.49	0.70	1.61	5.23	10.1	12.8	3.55	6.58	8.01	4.19	8.12	10.4	4.46	8.52	10.7	4.15	8.07	10.4

## Order Selection Guide

Direct Acting Type - With inlet strainer (40 MESH) where applicable

Type	Connections Inches	Adjustment Range psig	Adjustment Range barg	Part Number
ORIT-6	1/2 ODF	0/50	0/3.45	901093
	5/8 ODF			901096
	7/8 ODF			901103
	1/2 ODF	30/100	2.07/6.9	901101
	5/8 ODF			901173
	7/8 ODF			901180
	1/2 SAE	0/50	0/3.45	901117
	5/8 SAE			901124
	1/2 SAE			901194
	5/8 SAE	30/100	2.07/6.9	901201
1-1/8 ODF	0/50, 30/100			0/3.45, 2.07/6.9
ORIT-10	7/8 ODF	0/50	0/3.45	901131
	1-1/8 ODF			901138
	1-3/8 ODF			901166
	7/8 ODF	30/100	2.07/6.9	901208
	1-1/8 ODF			901229
	1-3/8 ODF			901250

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Accurate at the time of going to print.



## (S)ORIT-12, -15 & -20 Type

These **Evaporator Pressure Regulating Valves** are pilot operated using "high side" pressure and require a pilot supply connection from the compressor discharge to operate.

They are designed to be "normally open" providing an unparalleled ability to operate with virtually no suction line pressure drop.

The pilot operated design does not require the "allowable evaporator pressure change" necessary with the direct acting models, and can be simply sized based on design evaporator temperature and available pressure drop across the valve at full load conditions.



### Benefits

- High side pilot for improved temperature control and low  $\Delta P$  operation
- Adjustable settings up to 150 psig (10.3 barg)
- Optional solenoid "stop" feature to close valve during defrost
- Normally open design allows system evacuation without manual operator

## Valve Nomenclature/Ordering Instructions

### (S)ORIT

<b>S</b>	<b>ORI</b>	<b>T</b>	-	<b>15</b>	-	<b>0/100</b>	-	<b>1-3/8" ODF</b>	-	<b>120/50-60</b>
<b>Solenoid Stop Feature (optional)</b>	<b>Valve Type Open on Rise of Inlet Pressure</b>	<b>Pressure Tap on Inlet Connection</b>		<b>Valve Size</b>		<b>Adjustment Range psig*</b>		<b>Connection ODF Solder</b>		<b>Electrical Specifications for Solenoid Stop Feature (optional)</b>

\* Other pressure ranges are available.

## Installation

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## Specifications & Materials / Details of Construction

Valve Type	ORIT-12,-15,-20	SORIT-12,-15,-20
Connections	ODF Copper	
MRP	31 barg (450 psig)	
MOPD	20.7 barg (300 psig) SORIT only	
Max. Fluid Temp.	116°C (240°F)	
Min. Ambient/Fluid Temp.	-40°C (-40°F)	
Max. Ambient Temp.	48.9°C (120°F)	
Max External Leakage	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
UL	SA-5460	MH-4576
Compatibility	All HFC, HCFC Refrigerants and blends	

Valve Type	Port Size mm	Adjustment Range barg	Standard Coil Ratings MKC-1 Volt/Hz	Watts	Connections ODF Solder Inches
(S)ORIT-12	19.8	0/6.90	24 V / 50-60 Hz	10	1-1/8
(S)ORIT-15	25.4		120 V / 50-60 Hz		1-3/8
(S)ORIT-20	33.3		208-240 V / 50-60 Hz 120-208-240 V / 50-60 Hz		1-5/8

## Selection Tables

Capacities based on 15°C condensing temperature, 0°K superheat at the evaporator, and 14°K superheat at the valve.

Valve Type	Evaporator Temperature °C	Refrigerant															
		22				134a				404A				507			
		Pressure Drop Across Valve - bar															
		0.03	0.10	0.40	0.70	0.03	0.10	0.40	0.70	0.03	0.10	0.40	0.70	0.03	0.10	0.40	0.70
(S)ORIT-12	5	7.64	13.9	27.3	35.5	6.09	11.0	21.4	27.4	7.41	13.5	26.6	34.6	7.17	13.0	25.7	33.5
	-5	6.40	11.6	22.7	29.3	4.95	8.94	17.1	21.5	6.11	11.1	21.7	28.1	5.92	10.8	21.1	27.3
	-15	5.29	9.59	18.5	23.6	3.95	7.11	13.3	16.3	4.96	8.99	17.4	22.4	4.82	8.74	17.0	21.8
	-25	4.30	7.76	14.7	18.5	-	-	-	-	3.96	7.16	13.7	17.3	3.86	6.97	13.4	16.9
(S)ORIT-15	5	12.6	22.9	44.8	57.9	10.1	18.2	34.9	44.0	12.3	22.3	43.7	56.5	11.9	21.6	42.3	54.8
	-5	10.6	19.2	37.1	47.4	8.18	14.7	27.6	34.1	10.1	18.3	35.6	45.7	9.79	17.8	34.6	44.4
	-15	8.75	15.8	30.1	37.8	6.53	11.7	21.1	25.0	8.20	14.8	28.4	36.0	7.97	14.4	27.7	35.2
	-25	7.11	12.8	23.7	29.0	-	-	-	-	6.55	11.8	22.1	27.4	6.38	11.5	21.6	26.9
(S)ORIT-20	5	27.7	50.3	98.5	127	22.1	40.0	76.8	97.4	26.9	48.9	95.9	124	26.0	47.3	92.8	121
	-5	23.2	42.1	81.6	105	17.9	32.3	60.9	75.7	22.1	40.2	78.2	101	21.5	39.0	76.0	97.9
	-15	19.2	34.7	66.3	83.7	14.3	25.6	46.8	56.1	18.0	32.5	62.6	79.5	17.5	31.6	61.0	77.7
	-25	15.6	28.0	52.4	64.5	-	-	-	-	14.4	25.9	48.8	60.8	14.0	25.2	47.8	59.6

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**Example:** The capacity of a (S)ORIT-12 using R-404A, evaporator temperature of -5°C, 0.1 bar pressure drop across the valve and a liquid temperature of 10°C, is equal to  $11.1 \times 1.06 = 11.8$  kW.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## Refrigerant Liquid Temperature Correction Factors.

Refrigerant	Liquid Temperature °C										
	-15°	-10°	-5°	0°	5°	10°	15°	20°	30°	35°	40°
Correction Factor, CF											
R-22	1.21	1.17	1.14	1.11	1.07	1.04	1	0.96	0.91	0.87	0.84
R-134a	1.25	1.21	1.17	1.14	1.09	1.05	1	0.95	0.89	0.84	0.81
R-404A	1.31	1.27	1.22	1.16	1.12	1.06	1	0.94	0.86	0.79	0.74
R-507	1.32	1.28	1.22	1.16	1.12	1.06	1	0.94	0.86	0.8	0.75

\* ARI standard capacities are based on 38°C saturated liquid temperature.  
Use the correction factor for 40°C liquid temperature and the capacities at 5°C evaporator temperature to determine approximate ARI standard capacity ratings.

## Order Selection Guide

Valve Type*	Connection Inches	Adjustment Range psig Externally Pilot Operated Type	Adjustment Range barg Externally Pilot Operated Type	Coil Type Required	Part Number
ORIT-12	1-1/8 ODF	0/100	0/6.9	-	901590
ORIT-15	1-3/8 ODF				901597
ORIT-20	1-5/8 ODF				901604

### Externally Pilot Operated Type - WITH Solenoid Stop

SORIT-12	1-1/8 ODF	0/100	0/6.9	MKC-1	901611
SORIT-15	1-3/8 ODF				901618
SORIT-20	1-5/8 ODF				901625

\* All PRV's are supplied less coil.

## Din Coils

Part Number	Type	Power	Electrical Connections
310683	MKC-1E 24 V / 50-60 Hz	10 W	DIN connector (not included)
310678	MKC-1E 120 V / 50-60 Hz	10 W	DIN connector (not included)
310679	MKC-1E 220-240 V / 50 Hz	10 W	DIN connector (not included)
310682	MKC-1E 208-240 V / 50-60 Hz	10 W	DIN connector (not included)
310040	MKC-1E 12 V DC	15 W	DIN connector (not included)
310041	MKC-1E 24 V DC	15 W	DIN connector (not included)
600000R	PG 9/11 DIN connector for MKC-1E and MKC-2E coils		

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on:  
racecustomerservice@parker.com / www.parker.com/race



## (S)ORIT-PI-2, -3, -4 & -5 Type

These **Evaporator Pressure Regulating Valves** are **Piloted Internally** using the natural pressure drop across the valve to operate and do not require a "high side" pilot connection. Like the (S)ORIT valves, the pilot operated design does not require the "allowable evaporator pressure change" necessary with the direct acting models, and can be simply sized based on design evaporator temperature and available pressure drop across the valve at full load conditions.



### Benefits

- **Piloted internally (no high side connection required)**
- **Adjustable settings 0-6.9 barg (0-150 psig)**
- **Optional solenoid stop feature to close valve during system defrost**
- **Optional electric open feature for "two temperature operation"**
- **Corrosion resistant construction**
- **Manual lift stem to allow system evacuation**

## Valve Nomenclature/Ordering Instructions

### (S)ORIT

S	ORI	T	-	PI	-	2	7	-	S	E	0/100
Solenoid Stop Feature (optional)	Valve Type Open on Rise of Inlet Pressure	Pressure Tap on Inlet Connection	-	Piloted Internally	-	Port Size in 1/4 of an Inch	Fitting Size in 1/8 of an Inch	-	Solenoid Stop Feature (optional)	Electric Open Feature (optional)	Adjustment Range psig*

\* Other pressure ranges are available.

### Installation

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

### Specifications & Materials / Details of Construction

Valve Type	ORIT-PI	SORIT-PI
Connections	ODF Copper	
MRP	27.6 barg (400 psig)	
MOPD	13.1 barg (190 psig) SORIT-PI model only	
Max. Fluid Temp.	116°C (240°F)	
Min. Ambient/Fluid Temp.	-40°C (-40°F)	
Max. Ambient Temp.	48.9°C (120°F)	
Max External Leakage	.10 oz/yr @ 300 psig (2.8 g/yr @ 20 barg)	
UL	SA-5460	MH-4576
Compatibility	All HFC, HCFC Refrigerants and blends	

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Valve Type	Port Size mm	Adjustment Range barg	Standard Coil Volt/Cycles	Ratings MKC-1 Watts	Connections ODF Solder Inches
(S)ORIT-PI-2	12.7		24 V / 50-60 Hz		5/8, 7/8, 1-1/8, 1-3/8
(S)ORIT-PI-3	19.1	0/6.90 or	120 V / 50-60 Hz	10	7/8, 1-1/8, 1-3/8, 1-5/8
(S)ORIT-PI-4	25.4	5.17/10.3	208-240 V / 50-60 Hz		1-1/8, 1-3/8, 1-5/8, 2-1/8
(S)ORIT-PI-5	31.8		120-208-240 V / 50-60 Hz		1-3/8, 1-5/8, 2-1/8

Accurate at the time of going to print.



## Selection Tables

### Capacities in kW

Capacities based on 15°C liquid temperature, 0°K superheat at the evaporator and 14°K superheat at the valve.

Valve Type	Evaporator Temperature °C	Refrigerant															
		22				134a				404A				507			
		Pressure Drop Across Valve - bar															
		0.03	0.1	0.4	0.7	0.03	0.1	0.4	0.7	0.03	0.1	0.4	0.7	0.03	0.1	0.4	0.7
(S)ORIT-PI-2	5	2.78	8.66	20.3	27.6	2.22	6.92	16.6	20.9	2.7	8.4	19.6	27	2.61	8.13	18.9	26.2
	-5	2.33	7.26	17.7	22.6	1.81	5.63	13.1	16.1	2.22	6.93	16.3	21.8	2.15	6.71	15.7	21.2
	-15	1.93	6.01	14.4	17.9	1.45	4.51	9.99	11.7	1.81	5.63	13.6	17.1	1.76	5.47	13.2	16.7
	-25	1.57	4.9	11.3	13.6	-	-	-	-	1.44	4.5	10.5	12.9	1.41	4.38	10.3	12.7
(S)ORIT-PI-3	5	3.55	20.3	40.1	53.6	2.84	16.3	32.3	40.9	3.45	19.7	38.7	52.3	3.33	19	37.4	50.7
	-5	2.98	17.1	34.3	44	2.31	13.3	25.6	31.8	2.84	16.3	32	42.3	2.75	15.8	31	41.2
	-15	2.47	14.2	27.9	35.2	1.85	10.7	19.7	23.5	2.31	13.3	26.3	33.4	2.24	12.9	25.6	32.6
	-25	2.01	11.6	22	27.1	-	-	-	-	1.85	10.7	20.5	25.5	1.8	10.4	20.1	25
(S)ORIT-PI-4	5	7.72	27.3	54.6	72.1	6.17	21.8	43.5	55.5	7.49	26.5	53	70.3	7.24	25.6	51.2	68.1
	-5	6.48	22.9	46.1	59.4	5.02	17.7	34.6	43.4	6.18	21.8	43.7	57.1	5.99	21.1	42.3	55.5
	-15	5.36	18.9	37.6	47.8	4.02	14.2	26.8	32.6	5.02	17.7	35.4	45.3	4.88	17.2	34.5	44.2
	-25	4.36	15.4	29.8	37.2	-	-	-	-	4.01	14.2	27.7	34.9	3.91	13.8	27.1	34.2
(S)ORIT-PI-5	5	22	42.2	83.1	108	17.6	33.6	65.2	83.6	21.3	41	80.9	105	20.6	39.6	78.3	102
	-5	18.4	35.4	69.1	89.3	14.3	27.2	52.1	65.8	17.6	33.7	66.1	85.7	17	32.7	64.2	83.3
	-15	15.3	29.2	56.4	72.1	11.4	21.6	40.5	49.8	14.3	27.3	53.1	68.2	13.9	26.6	51.7	66.6
	-25	12.4	23.6	44.9	56.4	-	-	-	-	11.4	21.8	41.7	52.8	11.1	21.2	40.8	51.7

### Refrigerant Liquid Temperature - Correction Factors

Refrigerant	Liquid Temperature °C										
	-15°	-10°	-5°	0°	5°	10°	15°	20°	30°	35°	40°
	Correction Factor, CF										
R-22	1.21	1.17	1.14	1.11	1.07	1.04	1	0.96	0.91	0.87	0.84
R-134a	1.25	1.21	1.17	1.14	1.09	1.05	1	0.95	0.89	0.84	0.81
R-404A	1.31	1.27	1.22	1.16	1.12	1.06	1	0.94	0.86	0.79	0.74
R-507	1.32	1.28	1.22	1.16	1.12	1.06	1	0.94	0.86	0.8	0.75

\* ARI standard capacities are based on 38°C saturated liquid temperature. Use the correction factor for 40°C liquid temperature and the capacities at 5°C evaporator temperature to determine approximate ARI standard capacity ratings.

**Example:** The capacity of a (S)ORIT-PI-3 using R-22, evaporator temperature of -15°C, 0.1 bar pressure drop across the valve and a liquid temperature of 10°C, is equal to 14.2 x 1.04 = 14.8 kW.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## Order Selection Guide

Valve Type *	Connection Inches	Adjustment Range psig	Adjustment Range barg	Coil Type Required	Part Number
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### Internally Pilot Operated Type

ORIT-PI-2-S	5/8 ODF	0/100	0/6.9	-	149072
	7/8 ODF				149073
	1-1/8 ODF				149074
	1-3/8 ODF				149075
ORIT-PI-3-S	7/8 ODF				149104
	1-1/8 ODF				149076
	1-3/8 ODF				149077
	1-5/8 ODF				149078
ORIT-PI-4-S	1-1/8 ODF				149079
	1-3/8 ODF				149080
	1-5/8 ODF				149081
	2-1/8 ODF				149082
ORIT-PI-5-S	1-3/8 ODF				149083
	1-5/8 ODF				149084
	2-1/8 ODF				149085

### Internally Pilot Operated Type - With Electric Open Feature

ORIT-PI-2-SE	5/8 ODF	0/100	0/6.9	MKC-1	149090
	7/8 ODF				149107
	1-1/8 ODF				149089
	1-3/8 ODF				special order valve
ORIT-PI-3-SE	7/8 ODF				special order valve
	1-1/8 ODF				149102
	1-3/8 ODF				special order valve
	1-5/8 ODF				149088
ORIT-PI-4-SE	1-1/8 ODF				special order valve
	1-3/8 ODF				149094
	1-5/8 ODF				special order valve
	2-1/8 ODF				special order valve
ORIT-PI-5-SE	1-3/8 ODF				special order valve
	1-5/8 ODF				149086
	2-1/8 ODF				special order valve

\* all valves are supplied less coil

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## Order Selection Guide

Valve Type **	Connection Inches	Adjustment Range psig	Adjustment Range barg	Coil Type Required	Part Number
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### Internally Pilot Operated Type - With Solenoid Stop

SORIT-PI-2-S	5/8 ODF	0/100	0/6.9	MKC-1	149019
	7/8 ODF				149020
	1-1/8 ODF				149018
	1-3/8 ODF				149024
SORIT-PI-3-S	7/8 ODF				149035
	1-1/8 ODF				149037
	1-3/8 ODF				149039
	1-5/8 ODF				149041
SORIT-PI-4-S	1-1/8 ODF				149049
	1-3/8 ODF				149051
	1-5/8 ODF				149053
	2-1/8 ODF				149057
SORIT-PI-5-S	1-3/8 ODF				149060
	1-5/8 ODF				149062
	2-1/8 ODF				149067

### Internally Pilot Operated Type - With Solenoid Stop and Electric Open Feature

SORIT-PI-2-SE	5/8 ODF	0/100	0/6.9	(2 coils required) MKC-1	149023
	7/8 ODF				149021
	1-1/8 ODF				149022
	1-3/8 ODF				149033
SORIT-PI-3-SE	7/8 ODF				149095
	1-1/8 ODF				149048
	1-3/8 ODF				149047
	1-5/8 ODF				149096
SORIT-PI-4-SE	1-1/8 ODF				149097
	1-3/8 ODF				149058
	1-5/8 ODF				149059
	2-1/8 ODF				149098
SORIT-PI-5-SE	1-3/8 ODF				149061
	1-5/8 ODF				149065
	2-1/8 ODF				149070

\*\* All valves are supplied less coil.

### Din Coils

Part Number	Type	Power	Electrical Connections
310683	MKC-1E 24 V / 50-60 Hz	10 W	DIN connector (not included)
310678	MKC-1E 120 V / 50-60 Hz	10 W	DIN connector (not included)
310679	MKC-1E 220-240 V / 50 Hz	10 W	DIN connector (not included)
310682	MKC-1E 208-240 V / 50-60 Hz	10 W	DIN connector (not included)
310040	MKC-1E 12 V DC Hz	15 W	DIN connector (not included)
310041	MKC-1E 24 VDC	15 W	DIN connector (not included)
600000R	PG 9/11 DIN connector for MKC-1E and MKC-2E coils		

Accurate at the time of going to print.



## Replacement Parts Kits for Pressure Regulating Valves

Valve Type	Kit No.	Description	Part Number
------------	---------	-------------	-------------

### Evaporator Pressure Regulating Valve Internal Parts Kits

(S)ORIT-12	KS-ORI-12	Adaptor, Pilot-Body \"T\" Seal, Piston Assembly, Bottom Spring	958005
(S)ORIT-15 CDA-15	KS-ORI/CDA-15	Pilot-Body \"T\" Seal, Piston Assembly, Sleeve, Sleeve \"O\" Ring, Bottom Spring	958007
(S)ORIT-20 CDA-20	KS-ORI/CDA-20	Pilot-Body Gasket, Piston Assembly, Sleeve, Sleeve \"O\" Ring, Bottom Spring	958009

### Evaporator Pressure Regulating Valve Conversion Kits

(S)ORIT-PI-4 or 3	SK-PI-4 TO 2	Body O-Ring (2), Guide Pin O-Ring (2), Seat O-Ring, Piston Spring, Guide Pin (2), Strainer and Pin Assembly, Capacity Reducer (except SK-PI 4), Piston Sleeve and Assembly	958161
(S)ORIT-PI-4 or 2	SK-PI-4 TO 3		958162
(S)ORIT-PI-3 or 2	SK-PI-4		958165
(S)ORIT-PI-5	SK-PI-5 TO 3		958163
(S)ORIT-PI-5	SK-PI-5 TO 4		958164

### Head Pressure Control Valve Parts Kits

ORI-6-65/225-H	KO-6-100/290	100/290 Replacement Spring Kit	908017
ORI-10-65/225-H	KO-10-100/290		908019

### Head Pressure Control Valve Pilot Valve Kits

ORIT-15-65/225	KS-ORI-15-65/225	Piston Assembly, Body Sleeve, Spring, Tetraseal, O-Ring	958036
ORIT-20-65/225	KS-ORI-20-65/225	Piston Assembly, Body Sleeve, Spring, Gasket, O-Ring	958038
CROT-12-65/225	KS-CRO-12-65/225	Piston Assembly, Body Sleeve, Spring, (2) Tetraseals	958046
CROT-15-65/225	KS-CRO-15-65/225	Piston Assembly, Body Sleeve, Spring, Tetraseal, O-Ring	958050

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## Replacement Parts Kits for Pressure Regulating Valves

Valve Type	Kit No.	Description	Part Number
------------	---------	-------------	-------------

### Discharge Bypass Valve Parts Kits

ADRS(E)-2	K-1800E-1	0/30 Replacement Spring Kit	908023	
ADRP(E)-3	K-1800E-2	0/80 Replacement Spring Kit	908025	
ADRHE-6				
ADRS(E)-2	A-8-0/30	Adjustable Spring Type Element	908027	
	A-8-0/80		908029	
ADRP(E)-3	A-3-0/30		908028	
ADRHE-6	A-3-0/80		908030	
DRP(E)-3	B-3P-25/35-AR		Adjustable Remote Bulb Type Element	908031
	B-3P-32/44-AR			908033
	B-3P-55/70-AR	908035		
	B-3P-65/80-AR	908037		
DRHE-6	B-3H-25/35-AR	908032		
	B-3H-32/44-AR	908034		
	B-3H-55/70-AR	908036		
	B-3H-65/80-AR	908038		
DRS(E)-2	D-8-*	Non-Adjustable Dome Type Element		-
DRP(E)-3	D-3P-*			-
DRH(E)-6	D-3H-*		-	
LAC-5,LAC-10	D-3L-*		-	
DRS(E)-2	R-8-*	Non-Adjustable Remote Bulb Type Element	-	
DRP(E)-3	R-3P-*		-	
DRHE-6	R-3H-*		-	

### Discharge Bypass Valve Internal Parts Kits

SHGB(E)-8	KS-SHGB-8	Piston Assy, Body Sleeve, Spring Tetraseal, Sleeve \"/>
SHGB(E)-15	KS-SHGB-15	

\* Specify pressure setting.

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## Replacement Parts Kits for Pressure Regulating Valves

Valve Type	Kit No.	Description	Part Number
------------	---------	-------------	-------------

### Discharge Bypass Valve Pilot Valve Kits

HGB(E)-8	K-HGB(E)-8	Pilot Assy, Tetraseal, Inlet Strainer, Cap Screws (4)	958156
SHGB(E)-8	K-SHGB(E)-8-0/100		958110
	K-SHGB(E)-8-0/75		958157
	K-SHGB(E)-8-0/55		958158
SHGB(E)-15	K-Y917		958022

### Defrost Differential Valve Pilot Differential Assembly Kits

DDR-20	K-XUL	Piston Valve, Restrictor Assembly Strainer, Gasket	381125
LDR-15, LDR-20, OLDR-15, OLDR-20	KS-XTT-1	Pilot Valve	382640

### Defrost Differential Valve Internal Parts Kits

DDR-20	KS-DDR-20	Piston Assembly, Body Sleeve, Spring, Gasket O-Ring	381122
LDR-15	KS-XTM	Valve Operator Assembly, Piston Assembly, Tube Gasket, Tetraseal Gasket, Closing Spring, Piston Ring, Backing Spring, O-Ring Suction Tube	381632
OLDR-15	KS-OLDR-15	Piston Assembly, Plunger Assembly, Kick-Off Spring, Piston Ring, Ring Spring O-Ring, (2) Tetraseals, Closing Spring	381649
OLDR-16	KS-OLDR-16		381653
LDR-20	KS-XT0	Valve Operator Assembly, Piston Assembly, Tube Gasket, Tetraseal Gasket, Closing Spring, Piston Ring, Backing Spring	381634
OLDR-20	KS-OLDR-20	Piston Assembly, Plunger Assembly, Kick-Off Spring, Piston Ring, Ring Spring Closing Spring, Tetraseal Gasket	381650

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## Check Valves

Stainless Steel Ball Valves or Soft Seat Valve  
ensuring very low leakage & high corrosion resistance

7



ENGINEERING YOUR SUCCESS.

# Check Valves



Copper **Check Valves** are designed to allow flow in one direction only. They are used in refrigeration, air conditioning and heat pump systems.

**Internal components seat or "check" preventing flow back through the valve:** Check valves can be used in liquid, discharge or suction lines.

## Benefits

- **Stainless steel ball valve or soft seat valve with neoprene O-ring ensure very low leakage and high corrosion resistance.**
- **Product with springs can be installed in vertically and with an angle of 30° from horizontal positions.**
- **FS Series are without spring**
- **SF Series are with spring**

## Installation

Vertically installation only for check valves without spring (PCV, CV), flow arrow must be pointing upwards. Check valves with spring can be installed vertically, the flow arrow must be pointing upwards or pointing downward to a maximum of 30° below horizontal position.

When installing these valves with solder connections, the internal parts should be protected from overheating by using a Parker calorie discharger (TB2) - see page 269 - or by wrapping the valve with a wet cloth.

## Specifications

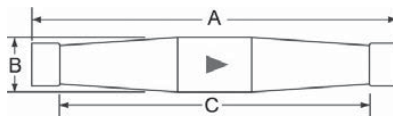
<b>Max Working Pressure</b>	<b>52 bar (CV)</b>
Temperature Range	-40°C up to +150°C

**Approvals:** PED 97/23/EC  
 UL file no. SA- 3604 (CV range)  
 UL file no. SA- 8571 (274-- range)  
 CSA certified File No.-LR87950 (274-- range)

## Technical Data

Part Number	Model UL	Connection ODF Inch	Dimensions mm			Liquid Flow capacity <sup>(1)</sup>				
			A	C	B	R22	R134a	R407C	R410A	R404A R507
CV4-6FS-6FS	3/8F	3/8	95.3	76.2	12.7	12.3	11.3	12.0	12.0	8.1
CV5-8FS-8FS	1/2F	1/2	95.3	73.2	15.9	22.5	20.4	21.8	22.2	14.8
CV7-10FS-10FS	5/8F	5/8	114.3	88.9	22.2	42.2	38.3	40.8	41.5	27.4
CV9-14FS-14FS	7/8F	7/8	114.3	88.9	28.7	87.2	79.1	84.1	85.5	56.6
CV11-18FS-18FS	1-1/8F	1-1/8	127.0	101.6	35.1	228.6	207.9	221.2	225.1	148.4
274243-00	PCVS25	5/16	88.9	71.4	13.3	10.0	9.0	10.0	10.0	7.0
274243-01	PCVS25	3/8	88.9	71.4	13.3	13.0	12.0	13.0	13.0	9.0
274243-03	PCVS25	1/2	88.9	78.7	13.3	17.0	15.5	17.0	17.0	11.5

(1) Liquid capacities are published in accordance with ARI 710-86 standard.  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar



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## Ball Valves

Used in supermarket and refrigeration applications  
Complete range, reliable, vented cap long life valves



ENGINEERING YOUR SUCCESS.

## Ball Valves - Bi-Flow Ball Valves

**Parker Bi-Flow Ball Valves** are available in a range of Inch Sizes from 1/4" to 4.1/8", metric from 6-108 mm but also in Schraeder valve version.



**Cap:** The brass cap thread broached in three places to ensure adequate venting when the cap is removed.

The cap is also tagged to accommodate wiring and sealing where legislation demands.

### Ball features:

A small hole in one sealing face of the ball prevents refrigerant being locked within the ball when closed.

It also allows the ball to exert a greater force against the Teflon Ball seal when closed, giving greater close-off security.

### Applications:

- Supermarkets
- Refrigeration

### Benefits:

- Compact
- Reliable
- Vented cap
- Long life
- Complete range from 1/4" to 4.1/8"
- Metric from 6 mm to 108 mm

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## Valve Dimensions

### Nomenclature

**O. D.** = Outside Diameter.

**BV6MM** = Ball valve for O.D. tube 6 mm.

**BV21SV** = Ball valve for O.D. tube 21/8 inches, so 2" 5/8 OD with Schraeder Valve (SV).

### Specifications and Dimensions

#### Metric Size

Metric Reference	For Tube O.D. mm	Bore Diameter mm	L mm	C mm	H mm	kv Value m <sup>3</sup> /h	Weight g
BV6MM	6	10	126	13	54.5	1.6	220
BV8MM	8	10	132	13	54.5	4.2	220
BV10MM	10	10	132	13	54.5	5.3	220
BV10MMSV	10	10	132	13	54.5	5.3	220
BV12MM	12	10	140	13	54.5	6.6	220
BV12MMSV	12	10	140	13	54.5	6.6	220
BV15MM	15	16	146	17	68	13	390
BV15MMSV	15	16	146	17	68	13	390
BV5 (ex BV16MM)	16	10	140	17	54.5	13	390
BV16MMSV	16	16	146	17	68	13	390
BV18MM	18	16	146	17	68	17	390
BV18MMSV	18	16	146	17	68	17	390
BV22MM	22	20	185	23	76	26	875
BV22MMSV	22	20	185	23	76	26	875
BV28MM	28	25	205	25	81	41	930
BV28MMSV	28	25	205	25	81	41	930
BV11 (ex BV35MM)	35	32	208	31	93	86	1600
BV35MMSV	35	32	208	31	93	86	1600
BV42MM	42	38	242	39	121	110	2700
BV42MMSV	42	38	242	39	121	110	2700
BV17 (ex BV54MM)	54	50	273	45	131	208	3800
BV54MMSV	54	50	273	45	131	208	3800
BV64MM	64	47	280	45	131	185	3800
BV64MMSV	64	47	280	45	131	185	3800
BV76MM	76	64	378	60	177	340	6700
BV76MMSV	76	64	378	60	177	340	6700
BV89MM	89	83	423	76	209.6	480	12250
BV89MMSV	89	83	423	76	209.6	480	12250
BV108MM	108	83	423	76	209.6	470	13100
BV108MMSV	108	83	423	76	209.6	470	13100

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## Valve Dimensions

### Specifications and Dimensions

#### Inches

Inches Reference	For Tube O.D. Inch	Bore Diameter mm	L mm	C mm	H mm	kv Value m <sup>3</sup> /h	Weight g
BV2	1/4"	10	126	13	54.5	1.6	220
BV3	3/8"	10	132	13	54.5	5.3	220
BV3SV	3/8"	10	132	13	54.5	5.3	220
BV4	1/2"	10	132	13	54.5	6.6	220
BV4SV	1/2"	10	140	13	54.5	6.6	220
BV5	5/8"	10	140	17	54.5	13	390
BV5SV	5/8"	16	146	17	68	13	390
BV6	3/4"	16	146	17	68	17	390
BV6SV	3/4"	16	146	17	68	17	390
BV7	7/8"	20	185	23	76	26	875
BV7SV	7/8"	20	185	23	76	26	875
BV9	1 1/8"	25	205	25	81	41	930
BV9SV	1 1/8"	25	205	25	81	41	930
BV11	1 3/8"	32	208	31	93	86	1600
BV11SV	1 3/8"	32	208	31	93	86	1600
BV13	1 5/8"	38	242	39	121	110	2700
BV13SV	1 5/8"	38	242	39	121	110	2700
BV17	2 1/8"	50	273	45	131	208	3800
BV17SV	2 1/8"	50	273	45	131	208	3800
BV21	2 5/8"	62	280	45	131	185	3800
BV21SV	2 5/8"	62	280	45	131	185	3800
BV25	3 1/8"	64	378	60	177	340	6700
BV29	3 5/8"	83	423	76	209.6	480	12250
BV33	4 1/8"	83	423	76	209.6	470	13100

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## Valve Dimensions

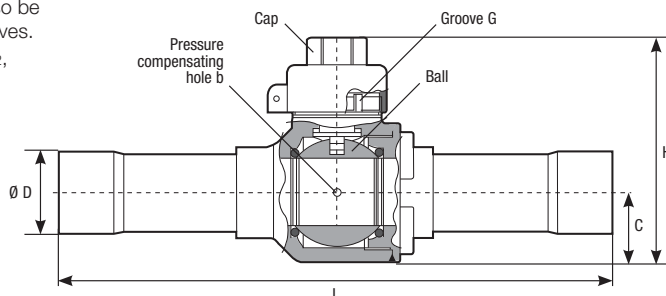
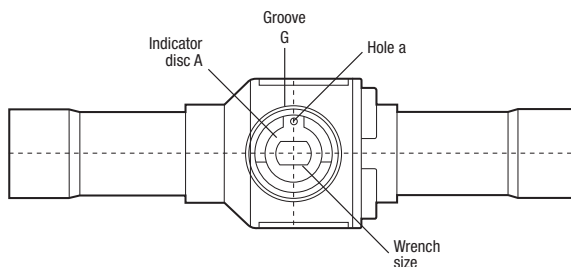
### Specifications and Dimensions

#### Working Range

- Safe working pressure: 45 barg
- Operating Temperature:
- -40°C to +150°C

#### Refrigerant Compatibility

- Compatible for use with all HFC and HCFC refrigerants.
- Valves are available could also be equipped with Schraeder valves.
- For more information on CO<sub>2</sub>, please contact us.



### Replacement Caps

Cap references are also suitable for reference equipped with Schraeder Valve

Cap for BV PN	From	To
BV00501	BV6MM-BV2	BV12MM-BV4
BV00502	BV15MM-BV5	BV18MM-BV6
BV00503	BV22MM-BV7	BV35MM-BV11
BV00504	BV42MM-BV13	BV54MM-BV17
BV00505	BV64MM-BV21	BV108MM-BV33

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## Filters Driers

Filters driers contributing to maintain the cleanliness of circuits



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## Filters Driers

HFC refrigerant and their associated oils are very hygroscopic more than CFC or HCFC and their mineral or alkyl benzene oils. The Polyol Esther Oil (POE) is made with of combination of ester acid and alcohol.

If a moisture content is more important than 75ppm, the mixture oil and water will generate acid and alcohol, it is a reversible process. At the same time, there could be a presence of moisture into the system wich could generate acid.

### To prevent risk of acids generation, chemical products are used:

- Molecular sieve is used to trap moisture in channels of 3Å size. Channels can trap only the water molecules (the water molecules are smaller than refrigerant molecules).  
The molecular sieve efficiency is roughly three times higher than activated alumina.
- Activated alumina is used to trap acid from the refrigerant and/or oil and moisture when the refrigerant has high content of moisture. Activated Alumina does not comply with low content of moisture as required with HFC refrigerants.



**These chemical products are present in the filter driers and we recommend to use an efficient filter drier in the liquid line (PR / Catch-All®) of the thermodynamic system.**

The **Filters Driers** can be sealed, for small systems, or flanged for larger systems. Chemical components can be filled in a compact bead or in compacted solid cores. Solid cores used chemical components moulded with a resin. This kind of filter drier is suitable for mobile system.

Chemical components inside filter driers are used alone or blended, it depends of the machine (rack, chiller etc...) and of the type of refrigerants used. A filter drier designed into a completely sealed refrigeration circuit, (ice machine, chiller etc.) can be supplied with a filter drier containing 100% molecular sieve.

In other machine designs, such as condensing units, the equipment is intended to be serviced. In this type of application, a filter drier with a blend of molecular sieve and activated alumina should be used. Sometimes moisture can become trapped inside the circuit. This could be due to the deterioration of the installation, as a result of a incomplete vacuum operation at start up, which could result in acids being formed. The use of a filter drier with activated alumina captures acids, ensuring longer system life.

The **Filter Drier** works in one direction only and is installed in the liquid line. In a reversible system like a heat pump or refrigeration unit with a defrosting by reversible cycle, the refrigerant must flow in two directions. For this application a special Bi flow filter, HPC, can be used. It is made with two special flow plates one at each end and traps the moisture, dirt and acids in both directions.

The efficiency of filters driers can also be checked by the addition of a sight glass with moisture indicator. When the filter drier is clogged, a few bubbles will appear in the sight glass and the temperature of the outlet is normally lower than in the inlet.



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# Drier for Transcritical Carbon Dioxide

## Type CO Series



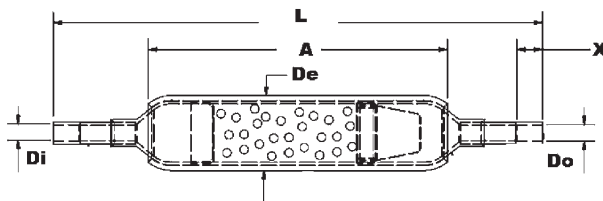
The **CO Series** product offering has been designed to withstand the extreme pressure of transcritical carbon dioxide (R-744) systems while providing complete system protection in a compact design.

A unique combination of moisture, acid and solid debris removal extends the life, reliability, and capacity of these systems that operate under extreme conditions.

These models are ideal for application in vending machine and beverage dispensing equipment. Combining ideal capability in a compact size, the **CO Series** enables system optimization while maximizing protection and cost effectiveness.

Part Number	Description	Dimensions mm						Drying Capacity g of H <sub>2</sub> O	Cooling Capacity kW <sup>(1)</sup>	PS MWP	Master Box Quantity
		L	De	Di	Do	X	A				
032710-0115S	3/4 CO <sub>2</sub> Drier CO-0115-S	140	22.4	3/16" ODF	3/16" ODF	7.62	88.9	1.5	2.5	155 bar (2250 psi)	200
032710-012S	3/4 CO <sub>2</sub> Drier CO-012-S	145	22.4	1/4" ODF	1/4" ODF	7.62	88.9	1.5	6	155 bar (2250 psi)	200
032710-0213S	1-1/8 CO <sub>2</sub> Drier CO-0213-S	155	31.8	1/4" ODF	1/4" ODM	7.62	101.1	3	8	155 bar (2250 psi)	90
032710-022S	1-1/8 CO <sub>2</sub> Drier CO-022-S	155	31.8	1/4" ODF	1/4" ODF	7.62	101.1	3	8	155 bar (2250 psi)	90
032710-082S	2.0 CO <sub>2</sub> Drier CO-082-S	278	61	1/4" ODF	1/4" ODF	7.62	139.7	10	8.4	155 bar (2250 psi)	25
032710-085S	2.0 CO <sub>2</sub> Drier CO-085-S	278	61	5/8" ODF	5/8" ODF	12.7	139.7	10	34	155 bar (2250 psi)	25

(1) Cooling capacity based on liquid Temperature: -5°C (20°F), Evaporating Temperature: -29°C (-20°F), Pressure drop: 0.07 bar (1 psi).



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# Copper Driers for R290 applications



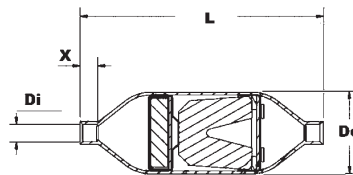
**Copper Driers** are the best choice to used with hydrocarbons refrigerant due to their one piece design without weld or braze.

100% XH9 molecular sieve is used in both solid core and compacted bead.

Copper products are dedicated mainly to vending machine and heat pumps markets.

The design of all internal part avoid to release dirt and particles while minimizing the pressure drop.

Part Number	Description	Dimensions mm						Drying Capacity g of H <sub>2</sub> O	Cooling Capacity kW <sup>(1)</sup>	PS MWP	Master Box Quantity
		L	De	Di	Do	X	A				
032705-00 (SKC10271)	1-3/16 Solid Core Dryer	89	30.2	1/4" ODF	1/4" ODF	7.1	7.1 <sup>9</sup> Cu. In	1.5	-	51.7 bar (750 psi)	50
058832-00	3/4" XH-9 Comp. Bead Dryer	68	19.1	1/4" ODF	1/4" ODF	7.1	5 g	0.8	-	37.2 bar (540 psi)	400



Accurate at the time of going to print.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



# PARKER Liquid Line Filter Driers, PR



**PR Liquid Line Filters Driers** ensure protection of refrigeration and air-conditioning systems from moisture, acids, and solid particles.

**PR Liquid Line Filters Driers** include solid cores made with 100% 3Å molecular sieve for a maximum efficiency of dehydration and to minimise the pressure drop in all thermodynamic systems .

**PR Liquid Line Filters Driers** are suitable for all CFC, HCFC, HFC and CO2 refrigerants and their associated oils, while respecting the maximum pressure allowable. **PR Liquid Line Filters Driers** contribute to maintain the cleanliness of the circuits, the efficiency of the systems and prolongs system life. This reduces the running cost and lowers the maintenance cost thanks to a improved protection of the main components such as the compressor and expansion valve.

### PR Liquid Line Filters Driers benefits:

- Copper connections allowing brasing operation without silver or low content of silver in braze alloy
- Solder fitting internally swaged to ensure a better flow and to reduce the pressure drop
- Solid cores made with one the most efficient 3Å molecular sieve in the market
- PS (MWP): 45 bar (652 psig)

### Benefits

PS (MWP)	45 barg (652 psig)
TS	-40°C to +80°C

- **Leak Testing:** 100% water leak tested with 42 bar (600 psi)
- **Coating:** Polyester Winter Gray 10-7069 high gloss epoxy powder coating. 500 h salt spray test (ASTM B117, ISO 9227)
- **Filtration:** 20 microns
- **Approvals:** PED 97/23/EC - article 3.3
- **Suitable with CFC, HCFC, HFC, CO2 Subcritical**

The physical size of the **PR Liquid Line Filter Driers** range allows the product to be manufactured under the PED category (art. 3.3) which does not require the "CE" marking.

## Technical Data

**Drying Capacity** - kg of refrigerant able to be dehydrated

PR Series <sup>(1)</sup>	R134a		R404A / R507		R407C		R410A		R 22	
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C
PR 03	5	4	6	5	5	4	4	3	5	4
PR 05	8	7	10	9	8	7	8	7	8	7
PR 08	19	15	22	18	17	15	15	12	17	14
PR 16	25	22	29	24	22	18	19	15	22	17
PR 30	53	44	57	48	17	40	40	34	46	39
PR 41	75	62	84	71	68	55	57	49	67	58
PR 75	132	113	151	129	121	105	103	86	121	103

(1) Drying capacity is the result of standard tests before and after drying from 1050 ppm to 50 ppm.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## PR Flare (SAE) Connections

### Dimensions, Weight and Packaging

Part Number	Fitting Type SAE	Overall Length (L) mm	Shell Diam. (D) mm	Weight kg	Master Box Quantity
PR032FM	1/4"	102.9	50.8	0.3	10
PR032	1/4"	110.8	50.8	0.3	10
PR033	3/8"	122.0	50.8	0.3	10
PR052FM	1/4"	112.5	50.8	0.3	10
PR052	1/4"	120.4	50.8	0.3	10
PR053	3/8"	131.6	50.8	0.3	10
PR082	1/4"	142.5	63.5	0.6	10
PR082FM	1/4"	134.6	63.5	0.6	10
PR083FM	3/8"	144.9	63.5	0.6	10
PR083	3/8"	153.7	63.5	0.6	10
PR084	1/2"	160.3	63.5	0.6	10
PR162	1/4"	161.5	63.5	0.7	10
PR163	3/8"	172.7	63.5	0.7	10
PR164	1/2"	179.3	63.5	0.7	10
PR165	5/8"	186.9	63.5	0.8	10
PR303	3/8"	251.2	76.2	1.5	10
PR304	1/2"	257.8	76.2	1.6	10
PR305	5/8"	265.4	76.2	1.6	10
PR414	1/2"	259.9	88.9	2.2	10
PR415	5/8"	267.5	88.9	2.2	10

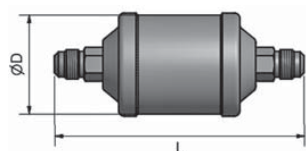
FM: Connections Inlet Female, Outlet Male

### Cooling Capacity

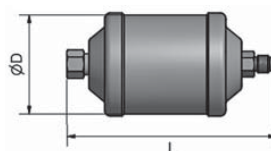
Part Number	Fitting Type SAE	Liquid Line Cooling Capacity kW <sup>(1)</sup>									
		R744 <sup>(2)</sup>	R404A R507	R134a	R407C	R410A R22	R407A R427A	R407F	R417A	R422A	R422D
PR032FM	1/4"	8.7	4.4	6.0	6.2	6.5	5.7	6.3	4.7	3.8	4.3
PR032	1/4"	8.7	4.4	6.0	6.2	6.5	5.7	6.3	4.7	3.8	4.3
PR033	3/8"	23.3	11.4	15.5	16.0	16.9	14.8	16.3	12.2	9.7	11.0
PR052FM	1/4"	9.5	4.7	6.5	6.7	7.0	6.1	6.8	5.1	4.0	4.6
PR052	1/4"	9.5	4.7	6.5	6.7	7.0	6.1	6.8	5.1	4.0	4.6
PR053	3/8"	25.3	12.2	16.9	17.3	18.2	15.9	17.6	13.1	10.5	11.9
PR082	1/4"	10.7	5.1	7.1	7.2	7.6	6.7	7.4	5.5	4.4	5.0
PR082FM	1/4"	10.7	5.1	7.1	7.2	7.6	6.7	7.4	5.5	4.4	5.0
PR083FM	3/8"	26.1	12.5	17.4	17.8	18.7	16.4	18.1	13.5	10.8	12.2
PR083	3/8"	26.1	12.5	17.4	17.8	18.7	16.4	18.1	13.5	10.8	12.2
PR084	1/2"	39.3	19.0	26.3	26.9	28.3	24.8	27.5	20.5	16.3	18.5
PR162	1/4"	10.7	5.1	7.1	7.2	7.6	6.7	7.4	5.5	4.4	5.0
PR163	3/8"	29.0	13.9	19.2	19.7	20.7	18.2	20.1	15.0	12.0	13.5
PR164	1/2"	52.0	25.1	34.6	35.6	37.4	32.8	36.2	27.0	21.6	24.4
PR165	5/8"	69.9	33.7	46.6	47.8	50.3	44.1	48.7	36.4	29.0	32.9
PR303	3/8"	29.0	14.2	19.7	20.2	21.2	18.6	20.6	15.3	12.2	13.9
PR304	1/2"	57.0	27.4	38.0	38.9	40.9	35.9	39.7	29.6	23.6	26.8
PR305	5/8"	72.1	35.0	48.4	49.5	52.1	45.7	50.5	37.7	30.1	34.1
PR414	1/2"	59.1	28.8	39.8	40.8	43.0	37.7	41.6	31.1	24.8	28.1
PR415	5/8"	77.4	37.2	51.5	52.8	55.6	48.7	53.8	40.2	32.1	36.3

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacity based on  
 Te = -30°C, Tc = -5°C, Δp = 0.07 bar (1 psig)



PR Flare



PR Female / Male Flare

Accurate at the time of going to print.



## PR ODF Solder Connections

### Dimensions, Weight and Packaging

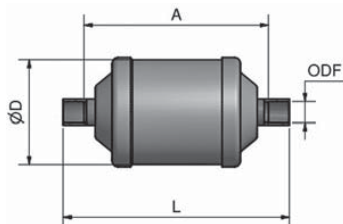
Part Number	Fitting Type ODF	Overall Length (L) mm	Lay in Length (A) mm	Shell Diam. (D) mm	Weight kg	Master Box Quantity
PR032S	1/4"	99.1	80.3	50.8	0.3	10
PR033S	3/8"	102.7	80.3	50.8	0.3	10
PR052S	1/4"	108.7	89.9	50.8	0.3	10
PR053S	3/8"	112.3	89.9	50.8	0.3	10
PR082S	1/4"	130.8	112.0	63.5	0.6	10
PR083S	3/8"	134.4	112.0	63.5	0.6	10
PR084S	1/2"	137.4	112.0	63.5	0.6	10
PR162S	1/4"	149.8	131.0	63.5	0.7	10
PR163S	3/8"	153.4	131.0	63.5	0.7	10
PR164S	1/2"	156.4	131.0	63.5	0.7	10
PR165S	5/8"	162.5	131.0	63.5	0.7	10
PR303S	3/8"	231.9	209.5	76.2	1.5	10
PR304S	1/2"	234.9	209.5	76.2	1.5	10
PR305S	5/8"	241.0	209.5	76.2	1.5	10
PR307SC	7/8"	258.8	220.6	76.2	1.5	10
PR414S	1/2"	237.0	211.6	88.9	2.1	10
PR415S	5/8"	243.1	211.6	88.9	2.1	10
PR417S	7/8"	260.9	222.7	88.9	2.1	10
PR757S	7/8"	346.7	308.5	88.9	3.0	10

### Cooling Capacity

Part Number	Fitting Type ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>									
		R744 <sup>(2)</sup>	R404A R507	R134a	R407C	R410A R22	R407A R427A	R407F	R417A	R422A	R422D
PR032S	1/4"	8.8	4.4	6.1	6.3	6.6	5.8	6.4	4.8	3.8	4.3
PR033S	3/8"	23.7	11.6	15.8	16.2	17.1	15.0	16.6	12.4	9.9	11.2
PR052S	1/4"	9.6	4.7	6.6	6.8	7.1	6.2	6.9	5.1	4.1	4.6
PR053S	3/8"	25.4	12.4	17.1	17.5	18.4	16.2	17.9	13.3	10.6	12.1
PR082S	1/4"	10.5	5.2	7.2	7.3	7.7	6.8	7.5	5.6	4.5	5.0
PR083S	3/8"	26.0	12.7	17.6	18.0	19.0	16.6	18.4	13.7	10.9	12.4
PR084S	1/2"	39.9	19.3	26.7	27.3	28.7	25.2	27.8	20.8	16.6	18.8
PR162S	1/4"	10.5	5.2	7.2	7.3	7.7	6.8	7.5	5.6	4.5	5.0
PR163S	3/8"	28.8	14.1	19.5	20.0	21.0	18.4	20.4	15.2	12.1	13.7
PR164S	1/2"	52.5	25.4	35.1	36.1	37.9	33.2	36.7	27.4	21.9	24.8
PR165S	5/8"	70.4	34.0	47.0	48.2	50.7	44.5	49.2	36.7	29.3	33.2
PR303S	3/8"	25.6	14.4	20.0	20.5	21.5	18.9	20.9	15.6	12.4	14.1
PR304S	1/2"	57.5	27.8	38.5	39.4	41.5	36.4	40.2	30.0	23.9	27.1
PR305S	5/8"	73.0	35.3	48.8	49.9	52.6	46.1	50.9	38.0	30.3	34.4
PR307SC	7/8"	88.3	42.8	59.3	60.7	63.9	56.0	61.9	46.2	36.8	41.8
PR414S	1/2"	54.2	29.1	40.4	41.4	43.6	38.2	42.2	31.5	25.1	28.5
PR415S	5/8"	78.4	37.5	52.0	53.3	56.1	49.1	54.3	40.5	32.3	36.6
PR417S	7/8"	110.1	53.1	73.4	75.2	79.2	69.4	76.7	57.2	45.7	51.8
PR757S	7/8"	118.2	56.5	78.2	80.1	84.3	73.9	81.7	60.9	48.6	55.1

(1) Cooling capacity in accordance with ARI 710-86 standard  
 $T_e = -15^\circ\text{C}$ ,  $T_c = 30^\circ\text{C}$ ,  $\Delta p = 0.07$  bar (1 psig)

(2) Cooling capacity based on  
 $T_e = -30^\circ\text{C}$ ,  $T_c = -5^\circ\text{C}$ ,  $\Delta p = 0.07$  bar (1 psig)



Accurate at the time of going to print.



## PR Metric Sizes Solder Connections

### Dimensions, Weight and Packaging

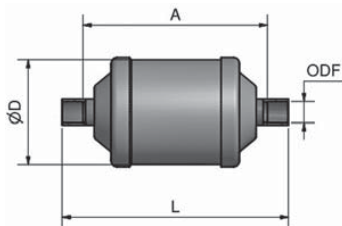
Part Number	Fitting Type ODF	Overall Length (L) mm	Lay in Length (A) mm	Shell Diam. (D) mm	Weight kg	Master Box Quantity
PR0306MMS	6 mm	99.1	85.1	50.8	0.3	10
PR0308MMS	8 mm	102.7	80.3	50.8	0.3	10
PR0506MMS	6 mm	108.7	94.7	50.8	0.3	10
PR0510MMS	10 mm	112.3	89.9	50.8	0.3	10
PR0806MMS	6 mm	130.8	116.8	63.5	0.6	10
PR0810MMS	10 mm	134.4	112.0	63.5	0.6	10
PR0812MMS	12 mm	137.4	113.0	63.5	0.6	10
PR1610MMS	10 mm	153.4	131.0	63.5	0.7	10
PR1612MMS	12 mm	156.4	132.0	63.5	0.7	10
PR1616MMS	16 mm	162.5	131.0	63.5	0.7	10
PR3016MMS	16 mm	241.0	209.5	76.2	1.5	10
PR4116MMS	16 mm	243.1	211.6	88.9	2.1	10

### Cooling Capacity

Part Number	Fitting Type ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>									
		R744 <sup>(2)</sup>	R404A R507	R134a	R407C	R410A R22	R407A R427A	R407F	R417A	R422A	R422D
PR0306MMS	6 mm	8.3	4.2	5.8	6.0	6.3	5.5	6.1	4.5	3.6	4.1
PR0308MMS	8 mm	22.6	11.6	15.8	16.2	17.1	15.0	16.6	12.4	9.9	11.2
PR0506MMS	6 mm	9.1	4.5	6.3	6.5	6.8	5.9	6.5	4.9	3.9	4.4
PR0510MMS	10 mm	25.9	12.6	17.4	17.9	18.8	16.5	18.2	13.6	10.8	12.3
PR0806MMS	6 mm	9.9	4.9	6.8	6.9	7.3	6.4	7.1	5.3	4.2	4.8
PR0810MMS	10 mm	26.5	12.9	18.0	18.4	19.3	16.9	18.7	14.0	11.1	12.6
PR0812MMS	12 mm	42.4	18.5	25.6	26.2	27.6	24.2	26.7	19.9	15.9	18.0
PR1610MMS	10 mm	26.2	12.7	17.7	18.1	19.1	16.7	18.5	13.8	11.0	12.5
PR1612MMS	12 mm	50.5	24.4	33.7	34.6	36.4	31.9	35.3	26.3	21.0	23.8
PR1616MMS	16 mm	86.2	36.1	49.9	51.1	53.8	47.1	52.1	38.9	31.0	35.2
PR3016MMS	16 mm	77.5	37.4	51.7	52.9	55.7	48.9	54.0	40.3	32.1	36.4
PR4116MMS	16 mm	82.7	39.8	55.1	56.5	59.4	52.1	57.6	43.0	34.3	38.8

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacity based on  
 Te = -30°C, Tc = -5°C, Δp = 0.07 bar (1 psig)



PR ODF



Accurate at the time of going to print.



# Filter Driers Solid Core C Series Parker Sporlan Catch-All®



**Parker Sporlan Catch-All® C Series Liquid Line Filter Driers** ensure the protection of the refrigeration and air-conditioning systems from moisture, acids, and solid particles.

**Catch-All® Liquid Filter Driers** contain an unique molded porous core, consisting of a blend of highly effective desiccants. They are unexcelled in moisture removal and acid retention.

**The famous molded porous core of the Catch-All® Filter-Drier performs its vital functions and improves the life cycle of all thermodynamic systems.**

## Benefits

PS (MWP)	44.8 barg (650 psig)
TS	-40°C up to +66°C

- **Leak Testing:** 45 bar in a pool
- **Coating:** Polyester Winter Gray 10-7069 is a U.L recognized high gloss epoxy powder coating
- **Filtration:** 20 microns  
500 h salt spray test (ASTM B117, ISO 9227)
- **Approvals:** UL file no. SA-1756A & B.  
PED 97/23/EC - article 3.3
- **Suitable with CFC, HCFC, HFC, CO2 subcritical**

The physical size of the C Series Catch-All® filter driers range allows the product to be manufactured under the PED category (art.3.3) which does not require the "CE" marking.

## Technical Data

### Catch-All®

**Drying capacity<sup>(1)</sup>** - kg of refrigerant able to be dehydrated

C-Series	R134a		R404A R507		R407C		R410A		R 22		Acid Capacity g <sup>(2)</sup>
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	
<b>C 03</b>	3.4	2.4	3.6	2.9	2.6	0.9	1.4	1.0	3.1	2.5	1.2
<b>C 05</b>	7.9	5.7	8.5	6.9	6.2	2.0	3.2	2.4	7.3	6.0	2.4
<b>C 08</b>	13.1	9.4	14.0	11.4	10.1	3.3	5.2	3.9	12.0	9.8	4.0
<b>C 16</b>	19.8	14.3	21.2	17.3	15.4	5.0	7.9	6.0	18.2	14.9	6.0
<b>C 30</b>	37.8	27.3	40.5	32.9	29.3	9.5	15.1	11.4	34.8	28.4	13.2
<b>C 41</b>	50.9	36.7	54.4	44.3	39.4	12.7	20.4	15.3	46.8	38.2	16.9
<b>C 60</b>	75.6	54.5	80.9	65.8	58.6	18.9	30.2	17.7	69.6	56.7	24.6

(1) Drying capacity is the result of standard tests before and after drying from 1050 ppm to 50 ppm.

(2) Adsorption capacity of acid at 0.05 TAN (Total Acid Number).

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## Technical Data

### Catch-All Flare (SAE) Connections

#### Dimensions, Weight and Packaging

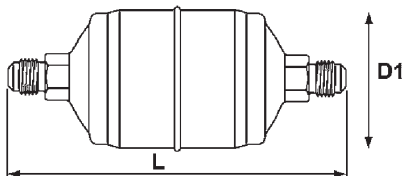
Part Number	Type	Connections SAE	Liquid Line Cooling Capacity kW <sup>(1)</sup>						Dimensions mm		Weight kg	Master Box Quantity
			R744 <sup>(2)</sup>	R404A R507	R134a	R410A	R407C	R22	Overall Length L	Shell Diam D1		
400000C	C-032	1/4"	7.0	3.5	4.6	4.9	4.6	5.3	106	44	0.2	25
400032C	C-032-FM	1/4"	7.0	3.5	4.6	4.9	4.6	5.3	97	44	0.2	25
400088C	C-033	3/8"	17.0	8.1	11.3	12.0	11.3	12.3	119	44	0.2	25
400200C	C-052	1/4"	10.0	4.9	6.7	7.0	6.7	7.4	121	62	0.3	25
400224C	C-052-FM	1/4"	10.0	4.9	6.7	7.0	6.7	7.4	106	62	0.3	25
400288C	C-053	3/8"	20.0	10.9	15.1	15.8	15.1	14.4	132	62	0.3	25
400416C	C-082	1/4"	10.0	4.9	6.7	7.0	6.7	7.4	143	67	0.6	25
400472C	C-083	3/8"	22.1	10.6	14.8	15.5	14.8	15.8	154	67	0.6	25
400536C	C-084	1/2"	42.4	20.7	17.8	29.9	17.8	30.6	160	67	0.6	25
401000C	C-162	1/4"	10.0	4.9	6.7	7.0	6.7	7.4	159	76	0.8	25
401048C	C-163	3/8"	22.1	10.6	14.8	15.5	14.8	15.8	171	76	0.8	25
401128C	C-164	1/2"	49.4	23.9	32.7	34.2	32.7	35.5	176	76	0.8	25
401216C	C-165	5/8"	67.4	32.4	44.3	47.1	44.3	48.5	184	76	0.8	25
401328	C-303	3/8"	22.1	10.6	14.8	15.5	14.8	16.2	246	76	1.6	8
401360	C-304	1/2"	49.4	23.9	32.7	34.5	32.7	35.5	251	76	1.6	8
401408	C-305	5/8"	72.5	34.8	47.8	51.0	47.8	52.4	259	76	1.6	8
401624	C-414	1/2"	55.7	26.7	36.9	39.0	36.9	40.5	252	89	2.0	10
401656	C-415	5/8"	77.4	37.3	51.0	54.2	51.0	55.6	260	89	2.0	10

(1) Cooling capacity in accordance with ARI 710-86 standard

Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacity based on

Te = -30°C, Tc = -5°C, Δp = 0.07 bar (1 psig)



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## Technical Data

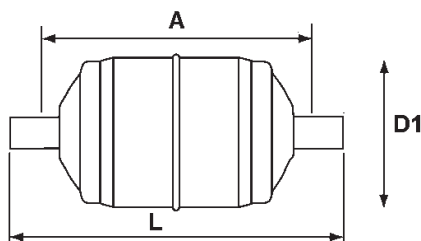
### Catch-All ODF Solder Connections

Cooling Capacity, Dimensions, Weight and Packaging

Part Number	Type	Connections ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>						Dimensions mm			Weight kg	Quantity Master Box
			R744 <sup>(2)</sup>	R404A R507	R134a	R410A	R407C	R22	L	A	D1		
400052C	C-032-S	1/4"	7.0	3.5	4.6	4.9	4.6	5.3	97	77	44	0.2	25
40001C	C-033-S	3/8"	18.6	9.1	12.3	13.0	12.3	13.4	99	77	44	0.2	25
400249C	C-052-S	1/4"	10.0	4.9	6.7	7.0	6.7	7.4	106	86	62	0.3	25
400329C	C-053-S	3/8"	22.7	10.9	15.1	15.8	15.1	16.5	109	87	62	0.3	25
400429C	C-082-S	1/4"	10.0	4.9	6.7	7.0	6.7	7.4	130	110	67	0.6	25
400503C	C-083-S	3/8"	25.1	12.0	16.5	17.6	16.5	18.3	133	111	67	0.6	25
400437C	C-084-S	1/2"	46.9	22.5	30.9	33.1	30.9	33.8	138	112	67	0.6	25
401018C	C-162-S	1/4"	10.0	4.9	6.7	7.0	6.7	7.4	146	126	76	0.8	25
401021C	C-163-S	3/8"	25.1	12.0	16.5	17.6	16.5	18.3	149	127	76	0.8	25
401023C	C-164-S	1/2"	53.6	25.7	35.5	37.6	35.5	38.7	152	126	76	0.8	25
401035C	C-165-S	5/8"	77.6	37.3	51.0	54.5	51.0	55.9	160	128	76	0.8	25
401305	C-303-S	3/8"	22.1	12.0	16.5	17.6	16.5	18.6	226	204	76	1.6	8
401307	C-304-S	1/2"	53.6	25.7	35.5	37.6	35.5	38.7	229	203	76	1.6	8
401449	C-305-S	5/8"	82.5	39.7	54.5	57.7	54.5	59.4	235	203	76	1.6	8
401505	C-307-S	7/8"	105.0	50.6	69.6	73.9	69.6	76.0	249	211	76	1.6	8
401609	C-414-S	1/2"	60.5	29.2	40.1	42.6	40.1	48.6	230	204	89	2.0	10
401610	C-415-S	5/8"	86.0	41.5	56.6	60.1	56.6	61.5	237	205	89	2.0	10
401614	C-417-S	7/8"	108.0	52.0	71.4	75.6	71.4	77.7	249	211	89	2.0	10
401618	C-419-S	1-1/8"	119.0	57.3	78.4	83.4	78.4	85.5	248	200	89	2.0	10
401837	C-607-S	7/8"	143.0	68.6	93.6	100.0	93.6	102.0	406	368	76	2.7	8
401865	C-609-S	1-1/8"	163.0	78.4	107.0	114.0	107.0	117.0	406	356	76	2.7	8

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacity based on  
 Te = -30°C, Tc = -5°C, Δp = 0.07 bar (1 psig)



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## Technical Data

### Catch-All ODF Metric Size Connections

#### Feature

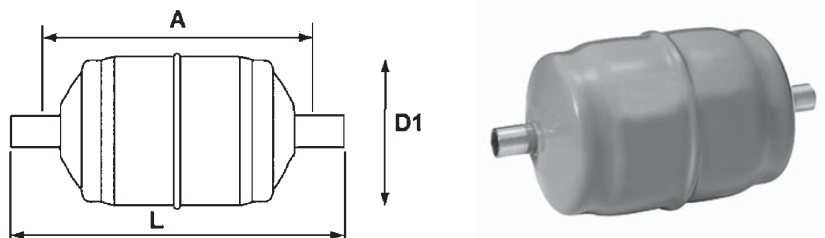
Part Number	Description	PS bar	Liquid Line Cooling Capacity kW <sup>(1)</sup>						Dimensions mm			Weight kg	Quantity Master Box
			R744 <sup>(2)</sup>	R404A R507	R134a	R410A	R407C	R22	L	A	D1		
400045C	C-032-S-M6	44.8	7.0	3.5	4.6	4.9	4.6	5.3	96	82	44	0.2	25
400252C	C-052-S-M6	44.8	10.0	4.9	6.7	7.0	6.7	7.4	108	94	62	0.3	25
400353	C-053-S-M10	44.8	22.7	10.9	15.1	15.8	15.1	16.5	112	90	62	0.3	25
400447C	C-082-S-M6	44.8	10.0	4.9	6.7	7.0	6.7	7.4	131	117	67	0.6	25
400495C	C-083-S-M10	44.8	25.1	11.9	16.5	17.6	16.5	18.3	135	112	67	0.6	25
400585C	C-084-S-M12	44.8	46.9	20.7	27.7	29.8	28.1	30.5	138	117	67	0.6	25
401114C	C-163-S-M10	44.8	25.1	11.9	16.5	17.6	16.5	18.3	149	127	76.2	0.8	25
401193C	C-164-S-M12	44.8	53.6	25.6	35.5	37.6	35.5	38.6	152	126	76.2	0.8	25
401201	C-165-S-M16	44.8	77.6	32.3	44.2	47.0	44.6	48.4	161	129	76.2	0.8	25
401353	C-303-S-M10	44.8	22.1	11.9	16.5	17.6	16.5	18.6	225	203	76.2	1.6	8
401403	C-304-S-M12	44.8	53.6	25.6	35.5	37.6	35.5	38.6	228	208	76.2	1.6	8
401458	C-305-S-M16	44.8	82.5	39.7	54.4	57.6	54.4	59.3	234	203	76.2	1.6	8
401506	C-307-S-M22	44.8	105.0	50.5	69.5	73.7	69.8	75.8	249	215	76.2	1.6	8

(1) Cooling capacity in accordance with ARI 710-86 standard

Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacity based on

Te = -30°C, Tc = -5°C, Δp = 0.07 bar (1 psig)



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# Filter Driers for Mobile Applications

Mobile application request special fittings to have better resistance with stress, vibrations etc. These fittings are standardized and called O-ring fitting because the sealing is made by an O-Ring, instead of a copper trumpet with Flare connections.

Copper product are dedicated mainly to vending machine and heat pumps markets 2 mains kind of fitting are used.

- O-Ring face seal where the O-Ring is fitted at the end of the connector. This require a nut and adaptor with a flat surface (See Fitting Type 1)
- O-ring seal where the tube and the O-ring are inside the connector. This require a special design of the tube to ensure a proper sealing ( See Fitting Type 2)

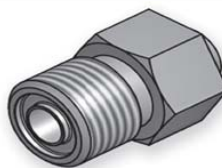
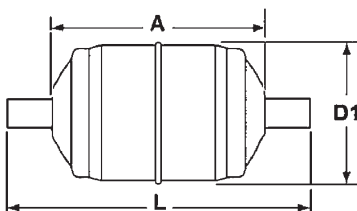
Parker provide 2 ranges of O-ring driers one with solid cores based on the Catch-All design and one based on Worldseries design with 100% molecular XH9 molecular sieve inside.

Both ranges are suitable with CFC, HCFC, HFC and HFO refrigerants.

Part Number	Description	Fittings		Thread	Fitting Type	Overall Length L mm	Shell Length A mm	Shell Diam D1 mm
		Inlet	Outlet					
<b>Solid Cores Filter Driers</b>								
400618	C-08E56	5/8 Male ORFS	5/8 Male ORFS	1-14 UNS-2A	1	143.4	98.5	67
401335-002	C-16E31	3/8 Male ORFS	3/8 Male ORFS	11/16-16 UN 2A	1	169.3	115.3	76
401343-001	C-16E48	1/2 ORS	1/2 ORS	13/16-16 UN 2A	-	167.8	115.3	76
401349-003	C-16E51	3/8 Male ORS	3/8 Male ORS	5/8-18 UNF 2A	2	166.6	115.3	76
401502-001	C-30E70	3/8 ORFS	3/8 ORFS	11/16-16 UN 2A	1	243.0	189.0	76
401380-001	C-30E71	1/2 ORFS	1/2 ORFS	13/16-16 UN 2A	1	241.5	189.0	76
401501	C-30E72	5/8 Male ORFS	5/8 Male ORFS	1-14 UNS 2A	1	233.9	188.9	76
401805-004	C-41E25	5/8 Male ORFS	1/2 Male ORFS	Inlet:1-14 UNS-2A Outlet:13/16-16 UN-2A	1	235.8	188.9	89
<b>Compacted Bead Filter Driers</b>								
WEU303-MOI	3/8 ORS Filter Drier	3/8 Male ORS	3/8 Male ORS	5/8-18 UNF 2A	2	238.5	195.8	76
WEU412-MOI	1/2 ORS Filter Drier	1/4 male ORS	1/4 male ORS	7/16-20 UNF 2A	2	288.0	250.0	89

Type 1: O-Ring Face Seal

Type 2: O-Ring Seal



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# Parker Sporlan K-Line



**Parker Sporlan K-LINE VS replaceable filter shells** ensure protection of refrigeration and air-conditioning systems from moisture, acids, and solid particles in liquid line or/and the suction line.

**VS Filter Shells** and associated cores allow answering to all problem of circuit's contamination for best protection of compressors and components.

An innovative conical core holder used in suction line allows minimizing pressure drop.

The very large surfaces of the conical or cylindrical filters create a very low pressure drop comparatively to the other competitors.

**VS Filter Shells** are delivered with **steel** or **copper connections** in **inches** and **metric** and are suitable for both suction and liquid lines.

Steel connections are suitable for installations made with steel or stainless steel pipes and of course for copper pipes.

Copper connections are suitable for copper piping and can be braze with low content of silver alloy or with copper phosphoric alloy.

**VS Filter Shells and associated cores holders and cores guaranties cleanness and performances of all systems, which contribute to reduce operation and maintenance costs.**

## Benefits

PS (MWP)	35 barg (VS) / 46 barg (VSHP)
TS	-40°C to +80°C

- **Leak Testing:** 100% water leak tested (40 bar up to 3 cores, 33 bars for 4 cores)
- **Coating:** Polyester coating giving 500 h salt spray test (ASTM B117, ISO 9227)
- **Filtration:** 20 microns
- **Approvals:** PED 97/23/EC - article I

Other working conditions see pages 222 to 224.

VS Series	Number of core(s)	Core holders	
		Cylindrical	Conical
VS48xx	1	ASK1	ASKSL
VS96xx	2	ASK2	ASKSL2
VS144xx	3	ASK3	ASKLS2 + ASK1
VS192xx	4	ASK4	ASKLS2 + ASK2

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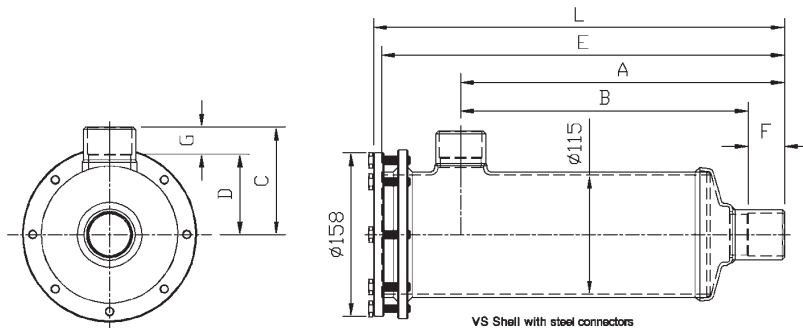
## Technical Data

### VS Shell 35 bar Steel Solder Connections (inches)

#### Dimensions, Weight and Packaging

Part Number	Connections ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>					Dimensions mm							
		R134a	R404A R507	R407C	R410A	R22	A	B	C	D	E	F	G	L
VS485	5/8"	68	48	71	73	74	151.8	124.8	87.5	72.5	227.8	27.0	15.0	235.8
VS487	7/8"	119	84	124	127	129	162.8	132.8	95.5	73.5	238.8	30.0	22.0	246.8
VS489	1-1/8"	166	117	173	178	180	161.8	131.8	97.5	72.5	237.8	30.0	25.0	245.8
VS4811	1-3/8"	207	147	216	223	225	161.8	131.8	97.5	72.5	237.8	30.0	25.0	245.8
VS4813	1-5/8"	224	158	234	241	244	168.8	133.8	99.5	74.5	244.8	35.0	25.0	252.8
VS4817	2-1/8"	234	166	245	252	255	166.8	141.8	99.5	74.5	242.8	25.0	25.0	250.8
VS4821	2-5/8"	245	173	256	264	267	172.5	147.5	127.5	102.5	258.5	25.0	25.0	266.5
VS4825	3-1/8"	262	185	274	282	285	182.9	138.9	133.0	88.0	268.9	45.0	45.0	276.9
VS967	7/8"	126	89	132	135	137	306.8	276.8	95.5	73.5	382.8	30.0	22.0	390.8
VS969	1-1/8"	206	145	215	221	224	305.8	275.8	97.5	72.5	381.8	30.0	25.0	389.8
VS9611	1-3/8"	210	148	219	225	228	305.8	275.8	97.5	72.5	381.8	30.0	25.0	389.8
VS9613	1-5/8"	234	166	245	252	255	312.8	277.8	99.5	74.5	388.8	35.0	25.0	396.8
VS9617	2-1/8"	246	174	257	265	268	310.8	285.8	99.5	74.5	386.8	25.0	25.0	394.8
VS9621	2-5/8"	251	177	262	270	273	316.5	291.5	127.5	102.5	402.5	25.0	25.0	410.5
VS9625	3-1/8"	282	198	293	300	314	326.9	282.9	133.0	88.0	412.9	44.0	45.0	420.9
VS1449	1-1/8"	212	150	222	228	231	446.8	416.8	97.5	72.5	522.8	30.0	25.0	530.8
VS14411	1-3/8"	234	165	244	251	254	446.8	416.8	97.5	72.5	522.8	30.0	25.0	530.8
VS14413	1-5/8"	245	173	255	263	266	453.8	418.8	99.5	74.5	529.8	35.0	25.0	537.8
VS14417	2-1/8"	271	191	283	291	294	451.8	426.8	99.5	74.5	527.8	25.0	25.0	535.8
VS14421	2-5/8"	281	198	293	301	305	457.5	432.5	127.5	102.5	543.5	25.0	25.0	551.5
VS14425	3-1/8"	309	217	321	330	334	467.9	423.9	133.0	88.0	553.9	44.0	45.0	561.9
VS1929	1-1/8"	220	156	233	237	240	590.8	560.8	97.5	72.5	666.8	30.0	25.0	674.8
VS19211	1-3/8"	242	171	253	260	263	590.8	560.8	97.5	72.5	666.8	30.0	25.0	674.8
VS19213	1-5/8"	253	179	264	272	275	597.8	562.8	99.5	74.5	673.8	35.0	25.0	681.8
VS19217	2-1/8"	284	200	296	305	308	595.8	570.8	99.5	74.5	671.8	25.0	25.0	679.8
VS19221	2-5/8"	293	207	306	315	319	601.5	576.5	127.5	102.5	687.5	25.0	25.0	695.5

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)



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## Technical Data

### VS Shell 46 bar Steel Solder Connections (inches)

Dimensions, Weight and Packaging

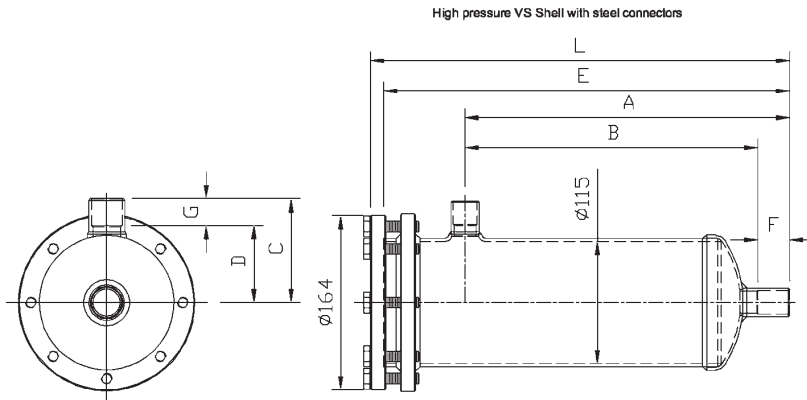
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Part Number	Connections ODF	Dimensions mm							
		A	B	C	D	E	F	G	L
VS485HP	5/8"	150.8	123.8	87.5	72.5	226.8	27.0	15.0	239.8
VS487HP	7/8"	161.5	131.5	99.5	73.5	237.5	30.0	22.0	250.5
VS489HP	1-1/8"	160.0	130.0	97.5	72.5	236.0	30.0	25.0	249.0
VS4811HP	1-3/8"	159.5	129.5	97.5	72.5	235.5	30.0	25.0	248.5
VS4813HP	1-5/8"	165.8	130.8	99.5	74.5	241.8	35.0	25.0	254.8
VS967HP	7/8"	305.5	275.5	99.5	73.5	381.5	30.0	22.0	394.5
VS969HP	1-1/8"	304.0	274.0	97.5	72.5	380.0	30.0	25.0	393.0
VS9611HP	1-3/8"	303.5	273.5	97.5	72.5	379.5	30.0	25.0	392.5
VS9613HP	1-5/8"	309.8	274.8	99.5	74.5	385.8	35.0	25.0	398.8

### Cooling Capacity

Part Number	Connections ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>				
		R134a	R404A R507	R407C	R410A	R22
VS485HP	5/8"	68	48	71	73	74
VS487HP	7/8"	119	84	124	127	129
VS489HP	1-1/8"	166	117	173	178	180
VS4811HP	1-3/8"	207	147	216	223	225
VS4813HP	1-5/8"	224	158	234	241	244
VS967HP	7/8"	126	147	216	223	137
VS969HP	1-1/8"	206	145	215	221	224
VS9611HP	1-3/8"	210	148	219	225	228
VS9613HP	1-5/8"	234	166	245	252	255

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)



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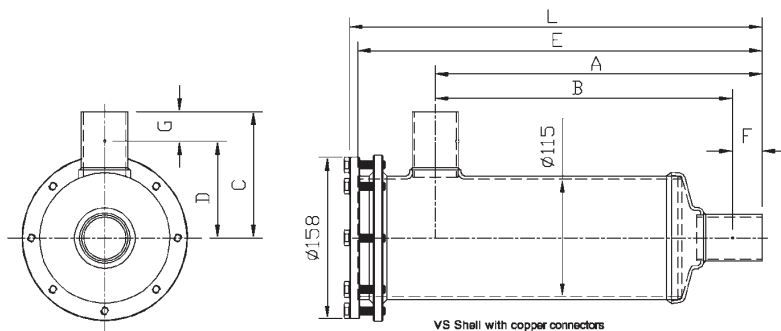
## Technical Data

### VS Shell 35 bar Copper Solder Connections (inches)

#### Dimensions, Weight and Packaging

Part Number	Connections ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>					Dimensions mm							
		R134a	R404A R507	R407C	R410A	R22	A	B	C	D	E	F	G	L
VS485S	5/8"	68	48	71	73	74	167.8	157.8	113.5	103.5	243.8	10.0	10.0	251.8
VS487S	7/8"	119	84	124	127	129	167.8	152.8	113.5	98.5	243.8	15.0	15.0	251.8
VS489S	1-1/8"	166	117	173	178	180	170.8	152.8	116.5	98.5	246.8	18.0	18.0	254.8
VS4811S	1-3/8"	207	147	216	223	225	173.8	150.8	119.5	96.5	249.8	23.0	23.0	257.8
VS4813S	1-5/8"	224	158	234	241	244	175.8	148.8	123.5	96.5	251.8	27.0	27.0	259.8
VS4817S	2-1/8"	234	166	245	252	255	170.3	138.3	127.5	95.5	246.3	32.0	32.0	254.3
VS4821S	2-5/8"	245	173	256	264	267	161.8	129.8	131.5	99.5	247.8	32.0	32.0	255.8
VS967S	7/8"	126	89	132	135	137	311.8	296.8	113.5	98.5	387.8	15.0	15.0	395.8
VS969S	1-1/8"	206	145	215	221	224	314.8	296.8	116.5	98.5	390.8	18.0	18.0	398.8
VS9611S	1-3/8"	210	148	219	225	228	317.8	294.8	119.5	96.5	393.8	23.0	23.0	401.8
VS9613S	1-5/8"	234	166	245	252	255	319.8	292.8	123.5	96.5	395.8	27.0	27.0	403.8
VS9617S	2-1/8"	246	174	257	265	268	314.3	282.3	127.5	95.5	390.3	32.0	32.0	398.3
VS1449S	1-1/8"	212	150	222	228	231	455.8	437.8	116.5	98.5	531.8	18.0	18.0	539.8
VS14411S	1-3/8"	234	165	244	251	254	458.8	435.8	119.5	96.5	534.8	23.0	23.0	542.8
VS14413S	1-5/8"	245	173	255	263	266	460.8	433.8	123.5	96.5	536.8	27.0	27.0	544.8
VS14417S	2-1/8"	271	191	283	291	294	455.3	423.3	127.5	95.5	531.3	32.0	32.0	539.3
VS1929S	1-1/8"	220	156	233	237	240	599.8	581.8	116.5	98.5	675.8	18.0	18.0	683.8
VS19211S	1-3/8"	242	171	253	260	263	602.8	579.8	119.5	96.5	678.8	23.0	23.0	686.8
VS19213S	1-5/8"	253	179	264	272	275	604.8	577.8	123.5	96.5	680.8	27.0	27.0	688.8
VS19217S	2-1/8"	284	200	296	305	308	599.3	567.3	127.5	95.5	675.3	32.0	32.0	683.3
VS19221S	2-5/8"	293	207	306	315	319	590.8	558.8	131.5	99.5	676.8	32.0	32.0	684.8

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)



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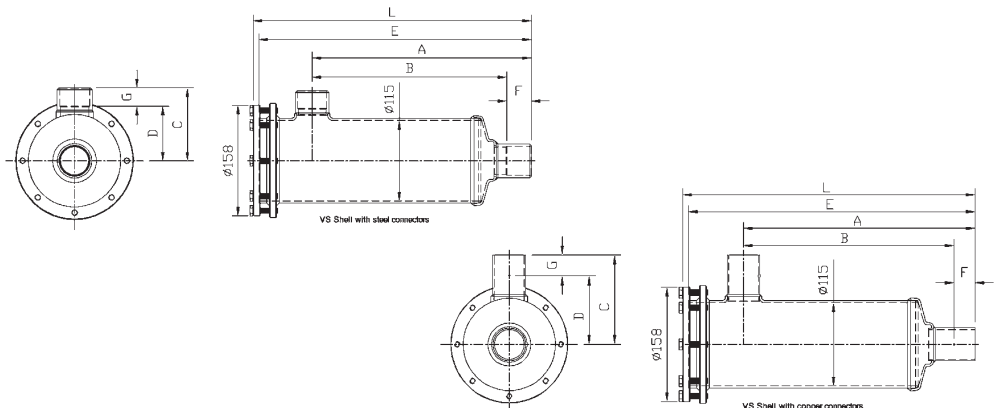
## Technical Data

### VS Shell 35 bar Steel/Copper Solder Connections (inches) Suction Lines Dimensions, Weight and Packaging

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Part Number	Connections ODF	Suction Line Cooling Capacity kW <sup>(1)</sup>					Dimensions mm						
		R134a	R404A R507	R407C	R410A	R22	A	B	C	D	E	F	G
<b>Steel Connections</b>													
VS489CF	1-1/8"	63	45	66	68	69	161.8	131.8	97.5	72.5	237.8	30.0	245.8
VS4811CF	1-3/8"	75	53	79	81	82	161.8	131.8	97.5	72.5	237.8	30.0	245.8
VS4813CF	1-5/8"	88	62	91	94	95	168.8	133.8	99.5	74.5	244.8	35.0	252.8
VS4817CF	2-1/8"	106	75	110	113	115	166.8	141.8	99.5	74.5	242.8	25.0	250.8
VS4821CF	2-5/8"	120	85	126	129	131	172.5	147.5	127.5	102.5	258.5	25.0	266.5
VS4825CF	3-1/8"	132	93	138	141	143	182.9	138.9	133.0	88.0	268.9	45.0	276.9
VS9613CF	1-5/8"	103	73	108	111	112	312.8	277.8	99.5	74.5	388.8	35.0	396.8
VS9617CF	2-1/8"	126	89	131	135	137	310.8	285.8	99.5	74.5	386.8	25.0	394.8
VS9621CF	2-5/8"	164	116	171	176	178	316.5	291.5	127.5	102.5	402.5	25.0	410.5
VS9625CF	3-1/8"	202	142	210	216	219	326.9	282.9	133.0	88.0	412.9	44.0	420.9
<b>Copper Connections</b>													
VS489SCF	1-1/8"	63	45	66	68	69	170.8	152.8	116.5	98.5	246.8	18.0	254.8
VS4811SCF	1-3/8"	75	53	79	81	82	173.8	150.8	119.5	96.5	249.8	23.0	257.8
VS4813SCF	1-5/8"	88	62	91	94	95	175.8	148.8	123.5	96.5	251.8	27.0	259.8
VS4817SCF	2-1/8"	106	75	110	113	115	170.3	138.3	127.5	95.5	246.3	32.0	254.3
VS4821SCF	2-5/8"	120	85	126	129	131	161.8	129.8	131.5	99.5	247.8	32.0	255.8
VS9613SCF	1-5/8"	103	73	108	111	112	319.8	292.8	123.5	96.5	395.8	27.0	403.8
VS9617SCF	2-1/8"	126	89	131	135	137	314.3	282.3	127.5	95.5	390.3	32.0	398.3

(1) Cooling capacities are published in accordance with ARI 730-2001 standard  
Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



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## Technical Data

### VS Shell 35 bar Steel Solder Connections (metric)

#### Dimensions, Weight and Packaging

Part Number	Connections ODF	Dimensions mm							
		A	B	C	D	E	F	G	L
VS485	16 mm	152	125	88	73	228	27	15	236
VS4828mm	28 mm	162	132	98	73	238	30	25	246
VS4811	35 mm	162	132	98	73	238	30	25	246
VS4842mm	42 mm	169	134	100	75	245	35	25	253
VS4817	54 mm	167	142	100	75	243	25	25	251
VS4864mm	64 mm	173	148	128	102	259	25	25	267
VS9628mm	28 mm	306	276	98	73	382	30	25	390
VS9611	35 mm	306	276	98	73	382	30	25	390
VS9642mm	42 mm	313	278	100	75	389	35	25	397
VS9617	54 mm	311	286	100	75	387	25	25	395
VS14428mm	28 mm	447	417	98	73	523	30	25	531
VS14411	35 mm	447	417	98	73	523	30	25	531
VS14442mm	42 mm	454	419	100	75	530	35	25	538
VS14417	54 mm	452	427	100	75	528	25	25	536
VS19211	35 mm	591	561	98	73	667	30	25	675
VS19242mm	42 mm	306	276	98	73	382	30	25	390
VS19217	54 mm	596	571	100	75	672	25	25	680

#### Cooling Capacity

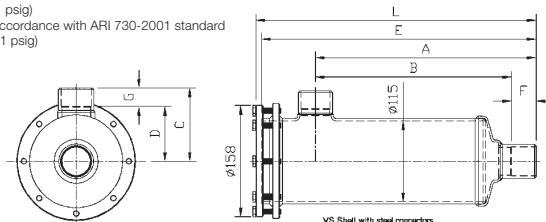
Part Number	Connections ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>					Suction line Cooling capacity kW <sup>(2)</sup>				
		R134a	R404A R507	R407C	R410A	R22	R134a	R404A R507	R407C	R410A	R22
VS485	16 mm	68	48	71	73	74	8.4	9.7	10.8	13.9	11.0
VS4828mm	28 mm	163	115	170	175	178	20.3	23.5	26.2	33.8	26.6
VS4811	35 mm	207	147	216	223	225	25.8	29.8	33.3	43.0	33.8
VS4842mm	42 mm	225	159	235	242	245	28.0	32.5	36.3	47.0	36.7
VS4817	54 mm	234	166	245	252	255	29.4	34.2	38.0	49.0	38.4
VS4864mm	64 mm	243	170	253	261	264	30.2	35.0	39.0	50.2	39.5
VS9628mm	28 mm	201	142	210	216	219	24.8	28.7	32.2	41.3	32.5
VS9611	35 mm	210	148	219	225	228	26.0	30.1	33.6	43.5	34.0
VS9642mm	42 mm	238	168	248	255	259	29.4	34.3	38.3	49.4	38.8
VS9617	54 mm	246	174	257	265	268	30.8	36.0	40.0	51.7	40.4
VS14428mm	28 mm	207	147	216	223	225	25.6	29.7	33.2	42.6	33.6
VS14411	35 mm	234	165	244	251	254	28.8	33.5	37.2	48.0	37.8
VS14442mm	42 mm	246	174	257	265	268	30.5	35.5	39.5	51.0	40.0
VS14417	54 mm	271	191	283	291	294	33.8	39.3	43.7	56.5	44.3
VS19211	35 mm	242	171	253	260	263	30.0	34.8	38.8	50.0	39.3
VS19242mm	42 mm	256	181	267	275	278	31.7	36.8	41.0	52.8	41.5
VS19217	54 mm	284	200	296	305	308	35.5	41.4	46.0	59.2	46.3

(1) Cooling capacity in accordance with ARI 710-86 standard

Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacities are published in accordance with ARI 730-2001 standard

Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



Accurate at the time of going to print.

## Technical Data

### VS Shell 46 bar Steel Solder Connections (metric)

#### Dimensions, Weight and Packaging

Part Number	Connections ODF	Dimensions mm							
		A	B	C	D	E	F	G	L
VS485HP	16 mm	151	124	88	73	227	27	15	240
VS4828mmHP	28 mm	160	130	98	73	236	30	25	249
VS4811HP	35 mm	159	129	98	73	235	30	25	248
VS4842mmHP	42 mm	166	131	100	75	242	35	25	255
VS9628mmHP	28 mm	304	274	98	73	380	30	25	393
VS9611HP	35 mm	303	273	98	73	379	30	25	392
VS9642mmHP	42 mm	310	275	100	75	386	35	25	399

#### Cooling Capacity

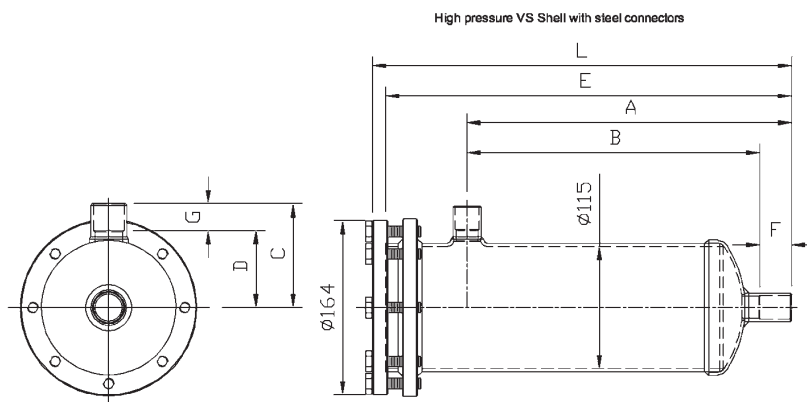
Part Number	Connections ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>					Suction line Cooling capacity kW <sup>(2)</sup>				
		R134a	R404A R507	R407C	R410A	R22	R134a	R404A R507	R407C	R410A	R22
VS485HP	16 mm	68	48	71	73	74	8.4	9.7	10.8	13.9	11
VS4828mmHP	28 mm	163	115	170	175	178	20.3	23.5	26.2	33.8	26.6
VS4811HP	35 mm	207	147	216	223	225	25.8	29.8	33.3	43	33.8
VS4842mmHP	42 mm	225	159	235	242	245	28	32.5	36.3	47	36.7
VS9628mmHP	28 mm	201	142	210	216	219	24.8	28.7	32.2	41.3	32.5
VS9611HP	35 mm	210	148	219	225	228	26	30.1	33.6	43.5	34
VS9642mmHP	42 mm	238	168	248	255	259	29.4	34.3	38.3	49.4	38.8

(1) Cooling capacity in accordance with ARI 710-86 standard

Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacities are published in accordance with ARI 730-2001 standard

Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



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## Technical Data

### VS Shell 35 bar Copper Solder Connections (metric)

#### Dimensions, Weight and Packaging

Part Number	Connections ODF	Dimensions mm							
		A	B	C	D	E	F	G	L
VS485S	16 mm	168	158	114	104	244	10	10	252
VS4828mmS	28 mm	171	153	117	99	247	18	18	255
VS4811S	35 mm	174	151	120	97	250	23	23	258
VS4842mmS	42 mm	176	149	124	97	252	27	27	260
VS4817S	54 mm	170	138	128	96	246	32	32	254
VS9628mmS	28 mm	315	297	117	99	391	18	18	399
VS9611S	35 mm	318	295	120	97	394	23	23	402
VS9642mmS	42 mm	320	293	124	97	396	27	27	404
VS9617S	54 mm	314	282	128	96	390	32	32	398
VS14428mmS	28 mm	456	438	117	99	532	18	18	540
VS14411S	35 mm	459	436	120	97	535	23	23	543
VS14442mmS	42 mm	461	434	124	97	537	27	27	545
VS14417S	54 mm	455	423	128	96	531	32	32	539
VS19211S	35 mm	603	580	120	97	679	23	23	687
VS19242mmS	42 mm	605	578	124	97	681	27	27	689
VS19217S	54 mm	599	567	128	96	675	32	32	683

#### Cooling Capacity

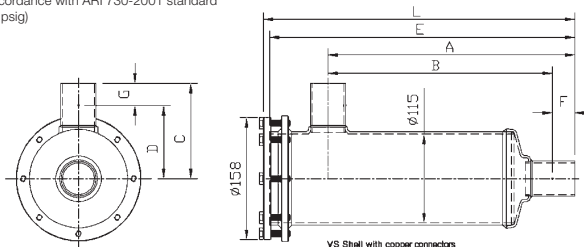
Part Number	Connections ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>					Suction line Cooling capacity kW <sup>(2)</sup>				
		R134a	R404A R507	R407C	R410A	R22	R134a	R404A R507	R407C	R410A	R22
VS485S	16 mm	68	48	71	73	74	8.4	9.7	10.8	13.9	11
VS4828mmS	28 mm	163	115	170	175	178	20.3	23.5	26.2	33.8	26.6
VS4811S	35 mm	207	147	216	223	225	25.8	29.8	33.3	43	33.8
VS4842mmS	42 mm	225	159	235	242	245	28	32.5	36.3	47	36.7
VS4817S	54 mm	234	166	245	252	255	29.4	34.2	38	49	38.4
VS9628mmS	28 mm	201	142	210	216	219	24.8	28.7	32.2	41.3	32.5
VS9611S	35 mm	210	148	219	225	228	26	30.1	33.6	43.5	34
VS9642mmS	42 mm	238	168	248	255	259	29.4	34.3	38.3	49.4	38.8
VS9617S	54 mm	246	174	257	265	268	30.8	36	40	51.7	40.4
VS14428mmS	28 mm	207	147	216	223	225	25.6	29.7	33.2	42.6	33.6
VS14411S	35 mm	234	165	244	251	254	28.8	33.5	37.2	48	37.8
VS14442mmS	42 mm	246	174	257	265	268	30.5	35.5	39.5	51	40
VS14417S	54 mm	271	191	283	291	294	33.8	39.3	43.7	56.5	44.3
VS19211S	35 mm	242	171	253	260	263	30	34.8	38.8	50	39.3
VS19242mmS	42 mm	256	181	267	275	278	31.7	36.8	41	52.8	41.5
VS19217S	54 mm	284	200	296	305	308	35.5	41.4	46	59.2	46.3

(1) Cooling capacity in accordance with ARI 710-86 standard

Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacities are published in accordance with ARI 730-2001 standard

Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



Accurate at the time of going to print.

## Technical Data

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### VS Shell 35 bar Steel/Copper Solder Connections (metric) Suction Lines

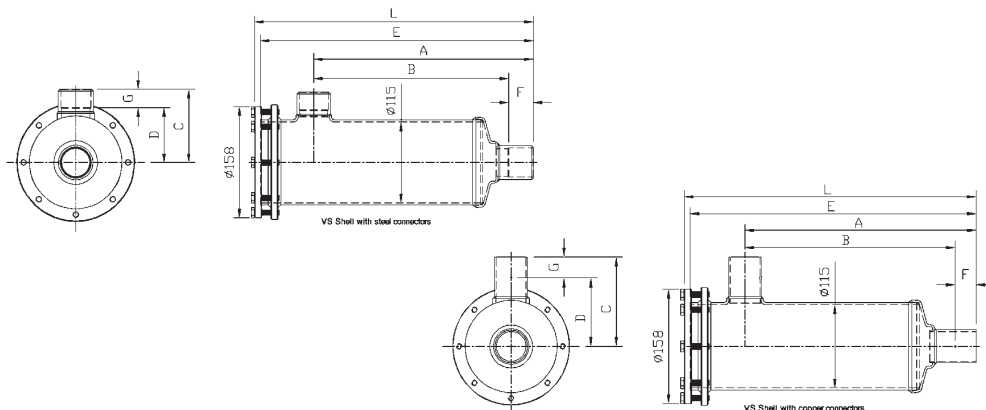
Dimensions, Weight and Packaging

Part Number	Connections ODF	Dimensions mm							
		A	B	C	D	E	F	G	L
<b>Steel Connections</b>									
VS4811CF	35 mm	162	132	98	73	238	30	25	246
VS4842mmCF	42 mm	169	134	100	75	245	35	25	253
VS4817CF	54 mm	167	142	100	75	243	25	25	251
VS9642mmCF	42 mm	313	278	100	75	389	35	25	397
VS9617CF	54 mm	311	286	100	75	387	25	25	395
<b>Copper Connections</b>									
VS4811SCF	35 mm	174	151	120	97	250	23	23	258
VS4842mmSCF	42 mm	176	149	124	97	252	27	27	260
VS4817SCF	54 mm	170	138	128	96	246	32	32	254
VS9642mmSCF	42 mm	320	293	124	97	396	27	27	404
VS9617SCF	54 mm	314	282	128	96	390	32	32	398

### Cooling Capacity

Part Number	Connections ODF	Suction Line Cooling Capacity kW <sup>(1)</sup>				
		R134a	R404A R507	R407C	R410A	R22
<b>Steel Connections</b>						
VS4811(S)CF	35 mm	75	53	79	81	82
VS4842(S)mmCF	42 mm	89	63	92	95	96
VS4817(S)CF	54 mm	106	75	110	113	115
VS9642(S)mmCF	42 mm	105	74	109	112	113
VS9617(S)CF	54 mm	126	89	131	135	137

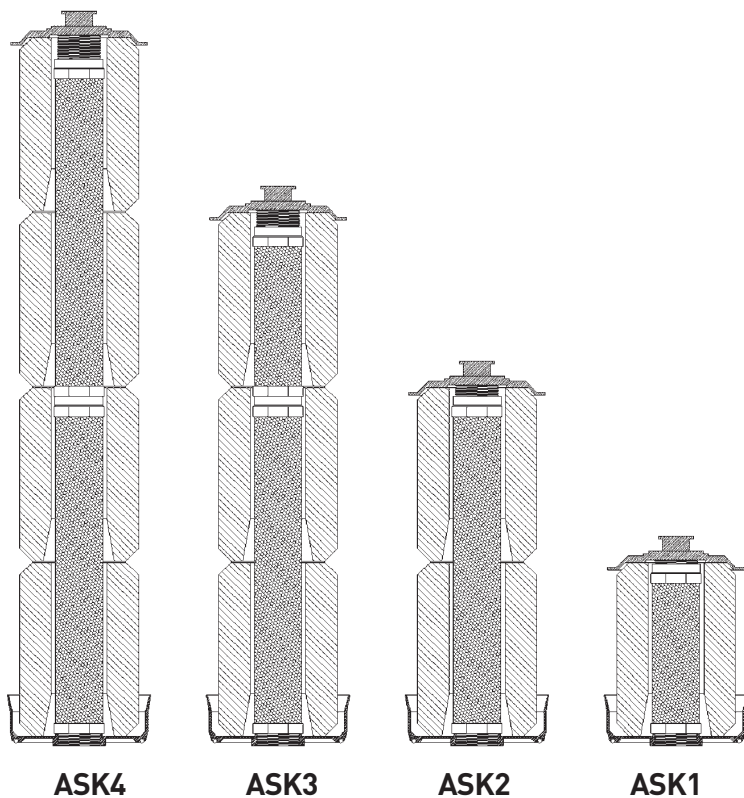
(1) Cooling capacities are published in accordance with ARI 730-2001 standard  
 Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



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**ASKLS**

Conical filter  
for suction use



**ASK**



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# Replaceable Filter Shells Sporlan Catch-All®



**Catch-All Replaceable Filter Shells** ensure the protection of refrigerant and air conditioning systems from moisture, acids, dirt and solid particles in both liquid and suction lines. For big connections size for the suction line see chapter with RSF suction filters.

**Catch-All Replaceable Filter Shells** can help to solve all contamination issues in all systems to prevent compressor failures and to avoid any problem with the components in the circuit.

### Catch-All Replaceable Filter Shells benefits:

- Copper connections suitable with steel and copper tubes allowing brazing operation without or low content of silver in braze alloy.
- Flange with 1/4" female thread and plug to fit a shut off valve or a Schraeder valve.
- Bolts easy replaceable (Screw + Nut), avoid any risk to destroy flange's threads
- Additional filter in the core holders to increase the filtration efficiency
- Core holders in steel
- PS (MWP): 44.8bar (650psig)

### Benefits

PS (MWP)	C Series: 44.8 bar (650 psig) - RSF Series 24.8 bar (500psi)
TS	-40°C to +80°C

- **Leak Testing:** 45 bar in a pool
- **Coating:** Polyester coating giving protection to 500 hours salt spray
- **Filtration:** 20 microns
- **Approvals:** PED 97/23/EC Art 3.3 (C-R42 Series) Cat 1 (C-48 Series)

**Catch-All: C Series** are mainly dedicated to liquid lines, **RSF Series** are dedicated to suction lines.

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## Technical Data

### Liquid Line Filter Shells

#### Dimensions, Weight and Packaging

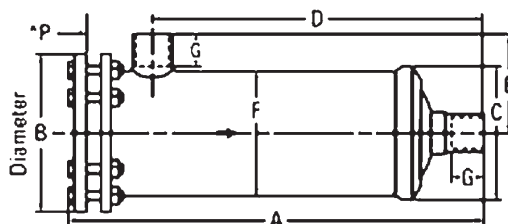
Part Number	Description	Connection ODF	Dimensions mm								Internal Volume L	Weight	CE Category
			A	B	C	D	E	F	G	P			
402010	C-R424-G	1/2"	229	121	-	172	71	89	13	165	1.0	1.4	3.3
402030	C-R425-G	5/8"	230	121	-	176	68	89	16	165	1.0	1.4	3.3
402050	C-R427-G	7/8"	240	121	-	184	77	89	19	165	1.0	1.4	3.3
402082	C-485-G	5/8"	232	152	127	150	89	121	13	191	1.8	2.5	1
402109	C-487-G	7/8"	236	152	127	154	94	121	19	191	1.8	2.5	1
402152	C-489-G	1-1/8"	241	152	127	162	96	121	23	191	1.8	2.5	1
402159	C-4811-G	1-3/8"	244	152	127	162	100	121	25	191	1.8	2.5	1
402172	C-4813-G	1-5/8"	244	152	127	162	101	121	28	191	1.8	2.5	1
402251	C-967-G	7/8"	377	152	127	295	94	121	19	330	3.2	3.3	1
402289	C-969-G	1-1/8"	382	152	127	300	96	121	23	330	3.2	3.3	1
402335	C-9611-G	1-3/8"	385	152	127	303	100	121	25	330	3.2	3.3	1
402343	C-9613-G	1-5/8"	385	152	127	303	101	121	28	330	3.2	3.3	1

#### Cooling Capacity

Part Number	Description	Connections ODF	Liquid Line Cooling Capacity kW <sup>(1)</sup>					Suction line Cooling capacity kW <sup>(2)</sup>				
			R134a	R404A R507	R407C	R410A	R22	R134a	R404A R507	R407C	R410A	R22
402010	C-R424-G	1/2"	37	27	37	39	40	3.9	4.6	5.1	6.6	5.2
402030	C-R425-G	5/8"	44	32	44	47	48	4.7	5.5	6.1	7.9	6.2
402050	C-R427-G	7/8"	59	44	60	64	65	6.3	7.5	8.3	10.7	8.4
402082	C-485-G	5/8"	47	34	47	50	51	5.0	5.9	6.5	8.4	6.6
402109	C-487-G	7/8"	77	56	77	82	84	8.2	9.7	10.7	13.8	10.9
402152	C-489-G	1-1/8"	139	101	140	148	152	14.8	17.3	19.2	25.0	19.6
402159	C-4811-G	1-3/8"	-	-	-	-	-	-	-	-	-	-
402172	C-4813-G	1-5/8"	-	-	-	-	-	-	-	-	-	-
402251	C-967-G	7/8"	139	92	127	134	138	13.3	15.7	17.4	22.5	17.8
402289	C-969-G	1-1/8"	126	114	157	167	171	16.6	19.6	21.6	28.0	22.1
402335	C-9611-G	1-3/8"	-	-	-	-	-	-	-	-	-	-
402343	C-9613-G	1-5/8"	-	-	-	-	-	-	-	-	-	-

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacities are published in accordance with ARI 730-2001 standard  
 Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



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## Technical Data

### Suction Line Filter Shells

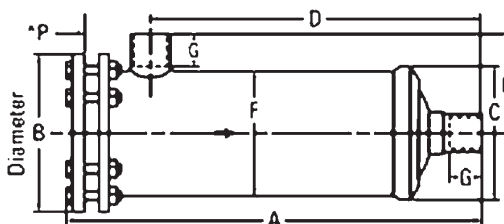
#### Dimensions, Weight and Packaging

Part Number	Description	Connection ODF	Dimensions mm								Internal Volume L	Weight	CE Category
			A	B	C	D	E	F	G	P			
800500	RSF-487-T	7/8"	236	152	127	154	94	121	19	178	1.8	5.5	1
800501	RSF-489-T	1-1/8"	238	152	127	159	97	121	23	178	1.8	5.5	1
800502	RSF-4811-T	1-3/8"	244	152	127	162	102	121	25	178	1.8	5.5	1
800505	RSF-4813-T	1-5/8"	244	152	127	162	102	121	28	178	1.8	5.5	1
800506	RSF-4817-T	2-1/8"	238	152	127	142	117	121	35	178	1.8	5.5	1
800507	RSF-4821-T	2-5/8"	248	152	127	146	132	121	37	178	1.8	5.5	1
800512	RSF-9617-T	2-1/8"	380	152	127	284	117	121	35	178	3.2	7.7	1
800514	RSF-9621-T	2-5/8"	392	152	127	289	130	121	37	178	3.2	7.7	1
800516	RSF-9625-T	3-1/8"	384	152	127	274	124	121	43	178	3.2	7.7	1

#### Cooling Capacity

Part Number	Description	Connections ODF	Suction line Cooling capacity kW <sup>(1)</sup>				
			R134a	R404A R507	R407C	R410A	R22
800500	RSF-487-T	7/8"	7,2	5,4	5,4	7,7	5,5
800501	RSF-489-T	1-1/8"	8,8	6,4	6,5	9,4	6,7
800502	RSF-4811-T	1-3/8"	10,7	7,8	8,0	11,4	8,2
800505	RSF-4813-T	1-5/8"	11,5	8,4	8,6	12,3	8,8
800506	RSF-4817-T	2-1/8"	12,4	9,1	9,3	13,3	9,5
800507	RSF-4821-T	2-5/8"	13,4	9,8	10,0	14,3	10,2
800512	RSF-9617-T	2-1/8"	22,3	15,7	16,4	23,9	17,4
800514	RSF-9621-T	2-5/8"	22,3	15,7	16,4	23,9	17,4
800516	RSF-9625-T	3-1/8"	22,3	15,7	16,4	23,9	17,6

(1) Cooling capacities are published in accordance with ARI 730-2001 standard  
 Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



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# PARKER VS Cores SPORLAN Catch-All Cores

Parker Sporlan offers a very large range of cores corresponding to all situations helping the users to maintain system's cleanness and efficiency.

This is a guarantee of cost reduction for maintenance and repair.



## First Operation

**VS32H:** Dedicated to suction line filter shell with an innovative conical filter to reduce pressure drop at compressor suction. It is a blend of molecular sieve and activated alumina for a great moisture adsorption and high capacity of acid retention. It must be used in a suction line filter shell with **ASKLS** conical filter.

**VS48H:** "The" standard core for the liquid line made with a blend of molecular sieve and activated alumina. This core has high capacity of dehydration and acid retention. It can be used in a suction line filter shell with **ASK** cylindrical filter.

**RC-4864:** Standard with high content of activated alumina dedicated to systems with high level content of moisture and acid during starting up. The distribution of molecular sieve and activated alumina is a perfect choice for all refrigerant that use mineral or alkylbenzene oils.

**VS48XH:** The highest moisture capacity available from a 48 inch cube core. It is made with 100% of 3Å molecular sieve in a good proportion of binding agent to have very high capacity of moisture adsorption. It is the perfect choice for chillers with shell and tubes or brazed plate evaporators. It doesn't have a potential for hydrolysis or bi-polar attraction of lubricant additives. It can be used in both liquid and suction line with **ASK** cylindrical filter.

**VS48F:** The felt element is designed for use in suction line will give effective filtration and compressor protection during start up and commissioning periods. For best results the It must be used in conjunction with the **ASKLS** conical filter. This allows small pressure drop and then protects compressors.

**Temporary use only.**

**RPE-48-BD:** The reinforced felt element designed for the suction line during the commissioning period and after. The felt element have an external stainless steel screen to prevent from destruction in case of too big pressure drop due to clogging. It with **ASK** cylindrical filter can replace **VS48F** after commissioning period.

## Maintenance and Repair

**VS48SC:** dedicated to cleaning, decontamination or after compressor burn out. It uses an optimum blend of molecular sieve, activated alumina and activated charcoal. This allows to trap acid, sludge and wax and of course moisture. It must be used in the same time in both suction and liquid line for decreasing quickly acid content and to minimize the pressure drop in suction filter shell. **Temporary use only.**

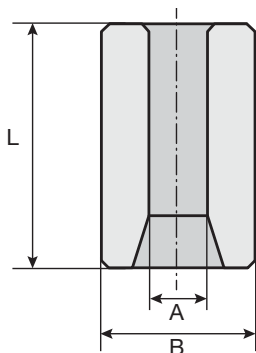
**RCW48 "GOLD":** This core has very high capacity of water retention. Especially made for refrigeration and air conditioning systems which work with HFC and POE lubricants. Thoses cores are the good choice after damage in water evaporator or when moisture content is very high. They can be used in both liquid and suction line.

**Operating temperature range:** -45°C to 65°C

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## Technical Data



Part Number	Description	Dimensions mm			Filtration Surface cm <sup>2</sup>	Product Weight kg	Quantity Master Box	Master Box Weight kg
		Height L	Ø External B	Ø Internal A				
404404	RCW-42	152	81	-	-	0.7	10	8.6
VS32H	Suction Drying Core	140	95	75	420	-	12	-
VS48H	High Drying Capacity Core	140	95	45	420	-	12	-
404360	RC-4864	140	94	45	420	0.9	12	12.7
VS48XH	Very High Drying Capacity Core	140	95	45	420	-	12	-
VS48SC	Burnout Core	140	95	45	420	-	12	-
404401	RCW-48-Gold	140	94	45	420	0.9	12	12.7
<b>Felt (Suction Line only)</b>								
VS48F	Felt core	140	95	75	420	0.4	12	5.9
404555	RPE-48-BD	140	95	62	420	0.4	12	-

### Drying Capacity - kg of refrigerant\*

Part Number	Description	Drying Capacities (kg of refrigerant) <sup>(1)</sup>										Acid Capacity <sup>(2)</sup> g
		R134a		R404A / R507		R407C		R410A		R22		
		24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	
404404	RCW-42	49	35	38	12	52	43	20	15	45	37	15.9
VS32H	Suction drying core	16	12	12	9	11	10	11	8	12	9	8.3
VS48H	High drying capacity core	37	28	28	21	42	24	25	19	28	21	12.5
404360	RC-4864	29	24	18	6	20	15	9	7	17	12	29.5
VS48XH	Very high drying capacity core	70	52	53	40	79	45	47	36	52	40	5.8
VS48SC	Burnout core	17	12	13	11	20	17	11	10	13	11	23.7
404401	RCW-48-GOLD	60	43	47	15	65	52	24	18	55	45	19.5

(1) Drying capacity is the result of standard tests before and after drying from 1050 ppm to 50 ppm.  
 (2) Adsorption capacity of acid at 0.05 TAN (Total Acid Number).



Accurate at the time of going to print.



# Bi-Flow Filter Driers HPC Series Parker Sporlan Catch-All®



**Parker Sporlan Catch-All® Bi-Flow Liquid Line Filter Driers** ensure the protection of reversible systems as refrigeration, air-conditioning and heat pumps from moisture, acids, and solid particles.

The specific design of the valves plates ensure liquid flow in two directions without possibility of dirt trapped inside the core being discharge into the circuit.

The design of cores and choice of the chemical components insure perfect result with small pressure drop.

**Efficiency and life of all reversible air conditioning two or three tubes systems as well as heat pumps can be improved with HPC Catch-All® filters driers.**

## Benefits

<b>PS (MWP)</b>	<b>44.8 bar (650 psig)</b>
TS	-40°C up to +66°C

- **Leak Testing:** 45 bar in a pool
- **Catch-Call® Paint:** Winter Gray 10-7069 is an U.L recognised high gloss epoxy powder coating.
- **Filtration:** 20 microns
- **Approvals:** PED 97/23/EC - article 3.3  
UL file no. SA - 1756A & B

The physical size of the **Catch-All® Bi-flow filter drier** range allows the product to be manufactured under the PED category (art.3.3) which does not require the "CE" marking.

HPC Series	Drying Capacities (kg of refrigerant) <sup>(1)</sup>										Acid Capacity <sup>(2)</sup> g
	R134a		R404A		R407C		R410A		R 22		
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	
HPC-08	10.7	8.9	9.7	7.9	8.2	2.7	4.3	3.2	9.7	7.9	2.9
HPC-10	11.8	10.3	10.3	8.8	9.1	4.0	4.7	3.5	10.8	8.8	3.9
HPC-16	19.2	16.9	17.2	14.9	15.4	5.0	7.9	6.0	18.2	14.9	4.1
HPC-30	35.8	30.9	33.3	28.4	29.3	9.5	15.1	11.4	34.8	28.4	9.3

(1) Drying capacity is the result of standard tests before and after drying from 1050 ppm to 50 ppm.

(2) Adsorption capacity of acid at 0.05 TAN (Total Acid Number).

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on:  
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## Technical Data

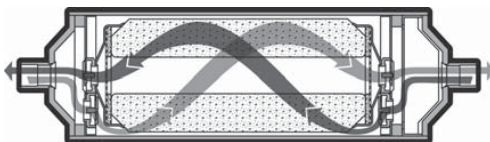
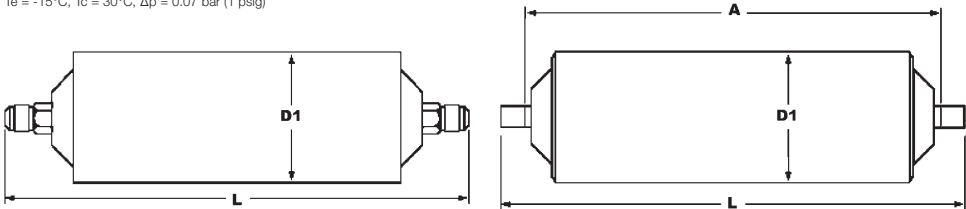
### HPC Bi Flow Filter Driers

#### Feature

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Part Number	Type	Connections		Dimensions mm			Cooling Capacity kW <sup>(1)</sup>					Weight kg	Quantity Master Box
		SAE	ODF	Overall length L	Lay in length A	Shell diameter D1	R134a	R407C	R404A R507	R410A	R22		
404062	HPC-082-S	-	1/4	135	115	76	7.0	7.0	5.2	7.4	7.7	0.6	25
404064	HPC-083-S	-	3/8	139	117	76	11.9	11.9	8.6	12.6	13.0	0.6	25
404066	HPC-084-S	-	1/2	142	116	76	13.3	13.3	9.8	14.0	14.4	0.6	25
404101	HPC-103-S	-	3/8	149	127	76	17.9	17.9	12.9	19.0	19.3	0.8	25
404161	HPC-104-S	-	1/2	152	126	76	28.8	28.8	20.9	30.5	31.2	0.8	25
404163	HPC-105-S	-	5/8	160	128	76	34.7	34.7	25.5	37.2	37.9	0.8	25
404303	HPC-163-S	-	3/8	176	154	76	17.9	17.9	12.9	19.0	19.3	1.0	25
404305	HPC-164-S	-	1/2	180	154	76	28.8	28.8	20.9	30.5	31.2	1.0	25
404308	HPC-165-S	-	5/8	187	155	76	34.7	34.7	25.5	37.2	37.9	1.0	25
404309	HPC-304-S	-	1/2	259	233	76	30.2	30.2	21.9	31.9	32.6	1.9	8
404311	HPC-305-S	-	5/8	265	233	76	34.0	34.0	24.9	36.2	36.9	1.9	8
404314	HPC-306-S	-	3/4	276	244	76	35.5	35.5	26.2	37.9	38.6	1.9	8
404313	HPC-307-S	-	7/8	280	242	76	36.9	36.9	27.1	39.3	40.0	1.9	8
<b>SAE ( Flare) Connections</b>													
404061	HPC-082	1/4	-	147	-	76	7.0	7.0	5.2	7.4	7.7	0.6	25
404063	HPC-083	3/8	-	158	-	76	11.9	11.9	8.6	12.6	13.0	0.6	25
404065	HPC-084	1/2	-	165	-	76	13.3	13.3	9.8	14.0	14.4	0.6	25
404080	HPC-103	3/8	-	171	-	76	16.1	16.1	11.8	17.2	17.6	0.8	25
404140	HPC-104	1/2	-	176	-	76	26.7	26.7	19.9	28.4	29.1	0.8	25
404102	HPC-105	5/8	-	184	-	76	33.0	33.0	24.2	35.1	35.8	0.8	25
404304	HPC-163	3/8	-	198	-	76	16.1	16.1	11.8	17.2	17.6	1.0	25
404306	HPC-164	1/2	-	202	-	76	26.7	26.7	19.9	28.4	29.1	1.0	25
404307	HPC-165	5/8	-	210	-	76	33.0	33.0	24.2	35.1	35.8	1.0	25
404310	HPC-304	1/2	-	281	-	76	28.1	28.1	20.7	29.8	30.5	1.9	8
404312	HPC-305	5/8	-	289	-	76	31.9	31.9	23.3	34.0	34.7	1.9	8

(1) Liquid capacity in accordance with ARI 710-86 standard.  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)



The filter drier operate in either flow direction, the refrigerant go across the cores from the external face to the internal space. HPC Catch-All® Bi-flow filters driers do not release the dirt collected in one direction when the flow direction reverses.



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Parker Sporlan

RAEC Catalogue Parker Sporlan R & A/C gal-2a/UK - Ed. July 2014

# Parker Liquid Line Filter Driers with Sight Glasses PRSG



**PRSG Liquid Line Filter Driers with Sight Glasses** ensure:

- Protection of refrigeration and air-conditioning systems from moisture, acids, and solid particles.
- Visual control of flow, dryness and color of liquid refrigerant.

**PRSG Liquid Line Filter Driers with Sight Glasses** include solid cores made with 100% molecular sieve 3 Å. ODF type are made with copper connections to help users to braze easily because silver content is not mandatory to ensure proper brazing operations.

This 2 in 1 product reduces the installation time for the users and minimize the risk of leakage. We recommend to protect the glass by calorie discharger **TB2 Thermal Block™** or to wrap with a damp cloth when **PRSG** with solder connections are used.

**2 in 1 PRSG product minimize installation work, risk of leakage and optimize system's size.**

## Benefits

<b>PS (MWP)</b>	<b>45 barg (652 psig)</b>
TS	-40°C to +80°C

- **Leak Testing:** 100% water leak tested with 42 bar (600 psi).
- **Coating:** Polyester Winter Gray 10-7069 high gloss epoxy powder coating. 500 h salt spray test (ASTM B117, ISO 9227).
- **Filtration:** 20 microns
- **Approvals:** UL file no. SA 12220  
PED 97/23/EC - article 3.3

The physical size of the **PRSG filters driers and sight glasses** range allows the product to be manufactured under the PED category (art.3.3) which does not require the "CE" marking.

## PRSG Drying Capacities

PRSG Series	R134a		R404A		R407C		R410A		R 22	
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C
PRSG 05	0	0	0	0	0	0	0	0	0	0
PRSG 08	19	15	22	18	17	15	15	12	17	14
PRSG 16	25	22	29	24	22	18	19	15	22	17
PRSG 30	43	36	46	39	38	33	33	28	38	32

(1) Drying capacity is the result of standard tests before and after drying from 1050 ppm to 50 ppm.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## Technical Data

### PRSG Filter Driers with Sight Glasses

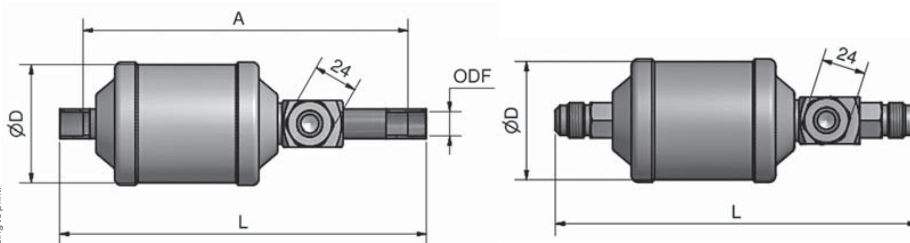
#### Feature

Part Number	Connection Size	Cooling Capacity kW <sup>(1)</sup>				Dimensions mm			Weight kg	Quantity Master Box
		R134a	R404A R507	R407C	R410A R22	Overall Length L	Lay in Length A	Shell Diam D1		
<b>ODF Connections</b>										
PRSG052S	1/4"	6.6	4.7	6.8	7.1	163	144	63.5	-	25
PRSG053S	3/8"	17.1	12.4	17.5	18.4	176	156	63.5	-	25
PRSG082S	1/4"	7.2	5.2	7.3	7.7	183	164	63.5	-	25
PRSG083S	3/8"	17.6	12.7	18.0	19.0	197	176	63.5	-	25
PRSG084S	1/2"	26.7	19.3	27.3	28.7	198	176	63.5	-	25
PRSG163S	3/8"	19.5	14.1	20.0	21.0	216	195	63.5	-	25
PRSG164S	1/2"	35.1	25.4	36.1	37.9	217	194	63.5	-	25
PRSG165S	5/8"	47.0	34.0	48.2	50.7	220	192	63.5	-	25
PRSG305S	5/8"	48.8	35.3	49.9	52.6	299	270	76	-	10
PRSG307S	7/8"	59.3	42.8	60.7	63.9	308	269	76	-	10
PRSG307SS	7/8"-5/8"	54.0	39.0	55.3	58.2	308	276	76	-	10
<b>Metric Sizes Connections</b>										
PRSG0510MM	10 mm	17.6	12.7	18.0	19.0	176	156	-	-	-
PRSG0810MM	10 mm	18.1	13.0	18.6	19.5	197	176	63.5	-	25
PRSG0812MM	12 mm	26.1	18.9	26.7	28.2	198	176	63.5	-	-
PRSG1612MM	12 mm	34.1	24.7	35.0	36.8	217	195	63.5	-	25
<b>SAE (Flare) Connections</b>										
PRSG052	1/4"	6.5	4.7	6.7	7.0	158	-	63.5	-	25
PRSG053	3/8"	16.9	12.2	17.3	18.2	169	-	63.5	-	25
PRSG082	1/4"	7.1	5.1	7.2	7.6	178	-	63.5	-	25
PRSG083	3/8"	17.4	12.5	17.8	18.7	189	-	63.5	-	25
PRSG084	1/2"	26.3	19.0	26.9	28.3	196	-	63.5	-	25
PRSG163	3/8"	19.2	13.9	19.7	20.7	208	-	63.5	-	25
PRSG164	1/2"	34.6	25.1	35.6	37.4	215	-	63.5	-	25
PRSG165	5/8"	46.6	33.7	47.8	50.3	222	-	63.5	-	25
PRSG305	5/8"	48.4	35.0	49.5	52.1	301	-	76	-	10

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

PRSG Solder

PRSG Flare



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## Cleaning after starting up

During the installation moisture can be introduced into the system.

When copper pipes are brazed without an internal flow of nitrogen, copper oxid will be produced.

The copper oxid deposit is unstuck from the piping by POE oil.

During the commissioning, period carbon deposit can clog expansion valve or suction line accumulator and can pollute the oil.

To prevent those damages of oil pollution we recommend the installation of a suction filter at the inlet of the compressor or at the inlet of the suction accumulator.

Suctions filters are equipped with one or two Schrader valves used to measure the pressure loss and could have an internal Bypass Relief valve.



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# Suction Filters SF Parker Sporlan Catch-All®



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**Parker Sporlan Catch-All® SF suction Line Filters** protect compressors by removing all particles from refrigeration and air-conditioning circuits. Particles can be carbon deposit, metallic shaving, resulting from wear of compressor or of piping installation.

**Parker Sporlan Catch-All® SF suction Line Filters** must be installed between evaporator and suction accumulator or compressor.

In case of reversible system **Catch-All® SF suction Filters** must be installed between the 4 way valve and compressor's suction valve.

**Catch-All® SF suction Line Filters** can be equipped with one Shraeder valve allowing to check the pressure drop.

**SF-28** and **SF-48 Series** are equipped with a bypass relief valve to prevent an excessive pressure drop. The compressor is better protected against overheating and risk of failures caused by too high pressure drop (too high superheat)

**Catch-All® SF suction Line Filters** is easy to install in suction line and can correspond to all users' requests. An innovative bypass is the key of your success.

## Benefits

PS (MWP)	27.6 bar (400 psig) 11, 28 and 48 Series 34.4 bar (500 psig) 64 Series
TS	-40°C up to +66°C

- **Leak Testing:** 45 bar in a pool
- **Catch-All® Paint:** Winter Gray 10-7069 is a U.L. recognized high gloss epoxy powder coating
- **Filtration:** 20 microns
- **Approvals:** PED 97/23/EC - article 3.3  
UL file no. SA-1756A & B

The physical size of the **Catch-All® suction filter drier** range allow the product to be manufactured under the PED category (art.3.3) which does not require the "CE" marking.

Accurate at the time of going to print.

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## Technical Data

### SF Suction Filters

#### Dimensions, Weight and Packaging

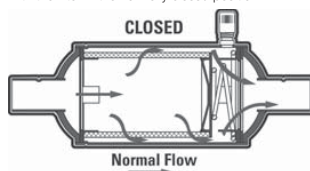
Part Number	Type	Filtration Surface cm <sup>2</sup>	Overall Length L	Dimensions mm Lay in Length A	Shell Diam D1	Weight kg	Quantity Master Box
800028	SF-283-F	180	223	-	76	1.02	12
800007	SF-114-F	71	133	-	51	0.34	25
800012	SF-114	71	141	-	51	0.34	25
800021	SF-115-F	71	111	110	51	0.34	25
800013	SF-115	71	117	116	51	0.34	25
800037	SF-285-T	180	212	211	51	1.02	12
800001	SF-286-T	180	223	222	51	1.02	12
800002	SF-287-T	180	227	225	51	1.02	12
800006	SF-289-T	180	242	240	51	1.02	12
800120	SF-489-T	310	315	314	51	1.36	12
800008	SF-4811-T	310	333	331	51	1.36	12
800011	SF-4813-T	310	341	339	51	1.36	12
800182	SF-6417-T	2500	278	215	121	3.40	6
800189	SF-6421-T	2500	278	211	121	3.40	6

#### Cooling Capacity

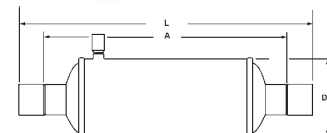
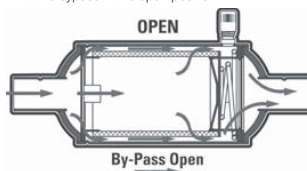
Part Number	Type	Connection Size		Bypass	Access Valve	Cooling Capacity kW <sup>(1)</sup>				
		SAE	ODF			R134a	R407C	R404A - R507	R410A	R22
800028	SF-283-F	3/8"	-	✓	-	3.1	4.0	3.6	5.1	4.0
800007	SF-114-F	1/2"	-	-	-	3.2	3.9	3.6	5.1	4.0
800012	SF-114	-	1/2"	-	-	3.5	4.6	4.1	5.9	4.6
800021	SF-115-F	5/8"	-	-	-	5.3	6.9	6.2	8.9	6.5
800013	SF-115	-	5/8"	-	-	6.0	7.8	7.0	10.0	7.9
800037	SF-285-T	-	5/8"	✓	✓	9.5	12.3	11.0	15.7	12.4
800001	SF-286-T	-	3/4"	✓	✓	11.8	15.3	13.7	19.6	15.5
800002	SF-287-T	-	7/8"	✓	✓	16.3	21.1	18.9	27.1	21.3
800006	SF-289-T	-	1-1/8"	✓	✓	21.6	28.0	25.0	36.0	28.2
800120	SF-489-T	-	1-1/8"	✓	✓	23.0	29.7	26.5	38.2	30.0
800008	SF-4811-T	-	1-3/8"	✓	✓	26.3	33.8	30.5	43.5	34.3
800011	SF-4813-T	-	1-5/8"	✓	✓	31.0	40.3	36.0	51.8	40.8
800182	SF-6417-T	-	2-1/8"	-	✓	118.6	168.2	142.4	216.2	172.1
800189	SF-6421-T	-	2-5/8"	-	✓	146.6	206.2	174.9	265.1	224.8

(1) Cooling capacities are published in accordance with ARI 730-2001 standard  
 Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)

The drawing illustrates the refrigerant flow pattern with the filter in the normally closed position.



The drawing illustrates the refrigerant flow with the bypass in the open position.



Accurate at the time of going to print.

Parker Sporlan SF-280/SF-480 Series Suction Filters can be installed in **either one flow direction or the other**. It does not mean the Suction Filters are suitable for **reversible** flow.



## Cleaning After Contamination or Burnout

The main contaminants of refrigeration and air conditioning systems are air and moisture that produce acid and dirt.

Oxygen will oxidise the refrigerant and produces water, moisture make an hydrolysis of refrigerant and oil.

In presence of contaminants refrigerant and oil produce acids.

Acids can destroy the windings of compressors or corrode copper tubes and components.

To check the presence of moisture, we recommend to install a moisture indicator in the liquid line; and to check the acidity of oil and refrigerant we recommend to use an "Acid test kit".

When refrigerant and oil are acid it is necessary to use special filters called "burnout filters" which are made with chemical components designed to clean and decontaminate.

The activated alumina is used for the retention of acids; the activated charcoal is used to trap both sludge and wax and the molecular sieve is used to trap moisture.

When acid is detected before a compressor failure, burnout filters don't need to have activated charcoal but must have a high content of activated alumina.

In case of electrical failure of the compressor, the destruction of the windings produces sludge and wax. Then burnout filters need to have activated charcoal to trap sludge and wax.

Burnout filters must be installed both in the liquid line and in the suction line.

Burnout filters in the liquid line can trap many dirt, acids, etc and prevent clogging of expansion valve without increasing quickly pressure drop because the velocity is small in a liquid line (less than 1m/s generally).

Burnout filters in the suction line prevents damage of new compressor from acid, dirt, sludge and wax.

Pressure drop of burnout filters in suction line increases slowly if there is another burnout filter in liquid line.

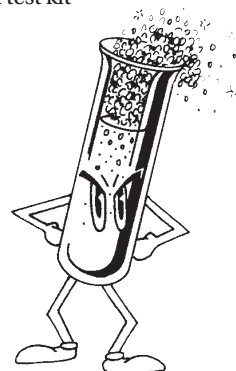
Indeed all the dirt and acid trapped in the liquid line burnout filters will avoid the clogging of the suction burnout filter.

By using two burnout filters, the efficiency of the decontamination is higher and the problems with expansion valve or compressor are minimised.

Be aware that pressure drop of suction filters have a bad effect to the compressors.

If the pressure drop increases, the superheat would increase in the suction line and could produce a compressor overheating and a failure by the destruction of windings insulation.

The result of decontamination procedure could be controlled by using an acid test kit and, the burnout filters must be replaced by liquid line filters driers and suction filters.



Accurate at the time of going to print.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



# Suction Filter Driers C Series Parker Sporlan Catch-All®



**Parker Sporlan Catch-All® compact suction Line Filter Driers** protect the compressors by removing all particles of refrigeration and air-conditioning circuits. Particles can be carbon deposit, metallic shaving, resulting from wear of compressor or of piping installation.

**Catch-All® suction Line Filter Driers** are suitable for moisture adsorption, retention of the acids and to trap sludge and wax by using moulded core with three components.

The large surface of the filter allows to trap dirt without increasing significantly pressure drop.

**Catch-All® suction Line Filter Driers** must be installed between the evaporator and suction accumulator or compressor. **Catch-All® compact suction Filter Driers** are particularly adapted for reversible systems and can be fitted between 4 way valve and compressor's suction valve.

Two Shraeder valves allow to check the pressure drop in the compact filter drier.

**The compacity and efficiency of Parker Sporlan Catch-All® suction Filter Driers help users to protect all compact installations from the contaminants.**

## Benefits

<b>Max Working Pressure</b>	<b>45 bar (650 psig)</b>
Temperature Range	-40°C up to +66°C

- **Leak Testing:** 45 bar in a pool
- **Catch-All® Paint:** Winter Gray 10-7069 is a U.L. recognised high gloss epoxy powder coating.
- **Filtration:** 20 microns
- **Approvals:** PED 97/23/EC - article 3.3

The physical size of the **Catch-All® suction filter drier** range allows the product to be manufactured under the PED category (art.3.3) which does not require the "CE" marking.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## Technical Data

C 140 Series	Drying Capacities (kg of refrigerant) <sup>(1)</sup>										Acid Capacity <sup>(2)</sup> (g)
	R134A		R404A		R407C		R410A		R22		
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	
C-14 Series	5.4	3.9	5.7	4.7	4.2	1.4	2.1	1.6	4.9	4.0	6.8

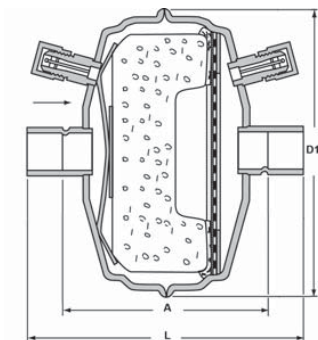
(1) Drying capacity is the result of standard tests before and after drying from 1050 ppm to 50 ppm.

(2) Adsorption capacity of acid at 0.05 TAN (Total Acid Number).

Part Number	Part Number	Connection Size ODF	Flow Capacity kW <sup>(3)</sup>					Dimensions mm			Weight Kg
			R22	R134a	R404A R507	R407C	R410A	L	A	D1	
400796	C-144-S-TT-HH	1/2"	4.25	3.2	3.75	4.2	5.4	105.2	79.8	112.8	0.907
400801	C-145-S-TT-HH	5/8"	6.5	4.95	5.7	6.35	8.2	111.3	79.8	112.8	0.907
400806	C-146-S-TT-HH	3/4"	8.9	6.8	7.9	8.8	11.3	122.7	87.6	112.8	0.907
400811	C-147-S-TT-HH	7/8"	9.8	7.5	8.7	9.7	12.5	126.2	88.1	112.8	0.907
400816	C-149-S-TT-HH	1-1/8"	13	9.9	11.6	12.9	16.6	125.2	76.5	112.8	0.907

(3) Suction capacities are published in accordance with ARI 730-2001 standard.

Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar.



Accurate at the time of going to print.

For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: [racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



# Burnout Filters C Series Parker Sporlan Catch-All®



**Parker Sporlan Catch-All® Burnout suction and Liquid Line Filters** ensure decontamination, cleaning of circuit polluted by moisture, dirt and acids where wax or sludge can be present.

**Catch-All® Burnout Filters** have high capacity of acid retention, of moisture adsorption and to trap sludge and wax. **Catch-All® Burnout Filters** can be used in both liquid and suction line to improve the efficiency and rapidity of cleaning processes.

This reduces pressure drop in suction line and protects the compressor of the overheating risk.

**Catch-All® Burnout Filters** use a special blend of molecular sieve, activated alumina and activated charcoal in a moulded cores in combination with a very efficient filter.

**Catch-All® Burnout Filters are for temporary use only.**

**Catch-All® Burnout Filters help the users to extend the life expectancy after a compressor damage and minimise the cost of operation by saving refrigerant and oil.**

## Benefits

PS (MWP)	44.8 bar (650 psig)
TS	-40°C up to +66°C

- **Leak Testing:** 45 bar in a pool
- **WSL Paint:** Winter Gray 10-7069 is a U.L recognized high gloss epoxy powder coating.
- **Filtration:** 20 microns
- **Approvals:** PED 97/23/EC - article 3.3  
UL Listed - File No. SA-1756A & B

The physical size of the **Catch-All® Burn out filters** range allows the product to be manufactured under the PED category (art.3.3) which does not require the "CE" marking.

## Catch-All C-HH Series Drying and Acid Capacities

C-HH Series	Drying capacities kg of refrigerant <sup>(1)</sup>										Acid Capacity <sup>(2)</sup> g
	R134a		R404A		R407C		R410A		R22		
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	
C-05 -HH	2.0	1.5	2.2	1.8	1.6	0.5	0.8	0.6	1.9	1.5	2.6
C-08 -HH	3.1	2.3	3.3	2.7	2.4	0.8	1.2	0.9	2.9	2.3	4.0
C-14 -HH	5.4	3.9	5.7	4.7	4.2	1.4	2.1	1.6	4.9	4.0	6.8
C-16 -HH	5.4	3.9	5.7	4.7	4.2	1.4	2.1	1.6	4.9	4.0	6.8
C-30 -HH	10.8	7.8	11.5	9.4	8.3	2.7	4.3	3.2	9.9	8.1	15.7
C-41 -HH	14.0	10.1	15.0	12.2	10.9	3.5	5.6	4.2	12.9	10.5	19.4
C-43 -HH	16.3	12.4	17.3	15.5	13.2	5.1	7.9	6.5	15.2	12.8	21.3
C-60 -HH	10.8	7.8	11.5	9.4	8.3	2.7	4.3	3.2	9.9	8.1	15.7

(1) Drying capacity is the result of standard tests before and after drying from 1050 ppm to 50 ppm.  
 (2) Adsorption capacity of acid at 0.05 TAN (Total Acid Number).

Accurate at the time of going to print.



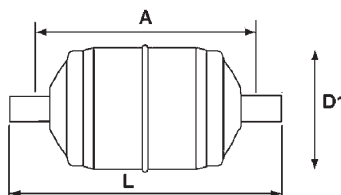
# Technical Data

## Burnout Filters Catch-All HH Series

### Feature

Part Number	Type	Connections		Liquid Line Cooling Capacity kW <sup>(1)</sup>						Suction Line Cooling Capacity kW <sup>(2)</sup>						Dimensions mm			Weight Kg	Quantity Master Box
		SAE	ODF	R134a	R407C	R404A R507	R410A	R22	R134a	R407C	R404A R507	R410A	R22	L	A	D1				
400232	C-052-HH	1/4"	-	6.7	7.4	4.9	7.0	7.4	0.7	1.0	0.8	1.2	1.0	121	-	62	0.3	25		
400209	C-052-S-HH	-	1/4"	6.7	7.4	4.9	7.0	7.4	0.7	1.0	0.8	1.2	1.0	106	87	62	0.3	25		
400218	C-052-S-T-HH	-	1/4"	6.7	7.4	4.9	7.0	7.4	0.7	1.0	0.8	1.2	1.0	106	87	62	0.3	25		
400424	C-082-HH	1/4"	-	6.7	7.4	4.9	7.0	7.4	0.7	1.0	0.8	1.2	1.0	143	-	67	0.6	25		
400488	C-083-HH	3/8"	-	14.8	15.8	10.6	15.5	15.8	1.5	2.1	1.8	2.6	2.1	154	-	67	0.6	25		
400435	C-083-S-HH	-	3/8"	14.8	15.8	10.6	15.5	15.8	1.5	2.1	1.8	2.6	2.1	133	111	67	0.6	25		
400436	C-083-S-T-HH	-	3/8"	14.8	15.8	10.6	15.5	15.8	1.5	2.1	1.8	2.6	2.1	133	111	67	0.6	25		
400441	C-084-S-T-HH	-	1/2"	30.9	30.9	22.5	33.1	33.8	1.8	2.5	2.2	2.9	2.5	138	112	67	0.6	25		
400796	C-144-S-TT-HH	-	1/2"	25.1	29	19.8	28.7	28.7	3.2	4.2	3.8	5.4	4.3	105	79	113	0.9	25		
400801	C-145-S-TT-HH	-	5/8"	39.2	44.2	30.0	43.7	43.3	5.0	6.4	5.7	8.2	6.5	111	79	113	0.9	25		
400806	C-146-S-TT-HH	-	3/4"	53.0	60.8	41.3	60.2	59.4	6.8	8.8	7.9	11.3	8.9	123	87	113	0.9	25		
400811	C-147-S-TT-HH	-	7/8"	58.5	67.0	45.5	66.5	65.5	7.5	9.7	8.7	12.5	9.8	126	88	113	0.9	25		
400816	C-149-S-TT-HH	-	1-1/8"	77.0	89.0	60.5	88.0	86.0	9.9	12.9	11.6	16.6	13.0	125	77	113	0.9	25		
401008	C-162-HH	1/4"	-	6.7	7.4	4.9	7.0	7.4	0.7	1.0	0.8	1.2	1.0	159	-	76	0.8	25		
401080	C-163-HH	3/8"	-	14.8	15.8	10.6	15.5	15.8	1.5	2.1	1.8	2.6	2.1	171	-	76	0.8	25		
401022	C-163-S-HH	-	3/8"	16.5	18.3	12.0	17.6	18.3	1.8	2.4	2.1	3.0	2.4	149	127	76	0.8	25		
401152	C-164-HH	1/2"	-	32.7	35.5	23.9	34.2	35.5	3.4	4.6	4.0	5.8	4.6	176	-	76	0.8	25		
401025	C-164-S-HH	-	1/2"	35.5	38.7	25.7	37.6	38.7	3.8	5.0	4.4	6.3	5.0	152	126	76	0.8	25		
401026	C-164-S-T-HH	-	1/2"	35.5	38.7	25.7	37.6	38.7	3.8	5.0	4.4	6.3	5.0	152	126	76	0.8	25		
401232	C-165-HH	5/8"	-	44.3	48.5	32.4	47.1	48.5	4.7	6.3	5.5	8.0	6.3	184	-	76	0.8	25		
401028	C-165-S-HH	-	5/8"	51.0	55.9	37.3	54.5	55.9	5.4	7.2	6.4	9.1	7.2	160	129	76	0.8	25		
401029	C-165-S-T-HH	-	5/8"	51.0	55.9	37.3	54.5	55.9	5.4	7.2	6.4	9.1	7.2	160	129	76	0.8	25		
401030	C-166-S-HH	-	3/4"	50.0	56.0	39.3	56.5	54.0	6.4	8.1	7.5	10.6	8.1	171	139	76	0.8	25		
401033	C-167-S-T-HH	-	7/8"	54.0	62.5	41.6	64.0	60.3	6.9	9.1	8.0	12.0	9.1	176	138	76	0.8	25		
401336	C-303-HH	3/8"	-	14.8	16.2	10.6	15.5	16.2	1.6	2.1	1.9	2.7	2.1	246	-	76	1.6	8		
401376	C-304-HH	1/2"	-	32.7	35.5	23.9	34.5	35.5	3.4	4.6	4.0	5.8	4.6	251	-	76	1.6	8		
401309	C-304-S-HH	-	1/2"	35.5	38.7	25.7	37.6	38.7	3.8	5.0	4.4	6.3	5.0	229	203	76	1.6	8		
401432	C-305-HH	5/8"	-	47.8	52.4	34.8	51.0	52.4	5.1	6.8	6.0	8.6	6.8	259	-	76	1.6	8		
401310	C-305-S-HH	-	5/8"	54.5	59.4	39.7	57.7	59.4	5.8	7.7	6.8	9.8	7.7	235	203	76	1.6	8		
401311	C-305-S-T-HH	-	5/8"	54.5	59.4	39.7	57.7	59.4	5.8	7.7	6.8	9.8	7.7	235	203	76	1.6	8		
401314	C-306-S-T-HH	-	3/4"	54.0	61.5	42	63.0	59.3	6.9	8.9	8.0	11.8	8.9	245	213	76	1.6	8		
401316	C-307-S-T-HH	-	7/8"	66.0	73.5	49.6	76.0	71.0	8.4	10.7	9.5	14.2	10.7	249	211	76	1.6	8		
401318	C-309-S-T-HH	-	1-1/8"	73.0	82.5	54.5	82.5	80.0	9.4	12.0	10.5	15.6	12.0	248	200	76	1.6	8		
401632	C-414-HH	1/2"	-	36.9	40.5	26.7	39.0	40.5	4.0	5.2	4.7	6.7	5.2	252	-	89	2.1	10		
401672	C-415-HH	5/8"	-	51.0	55.6	37.3	54.2	55.6	5.4	7.2	6.3	9.1	7.2	260	-	89	2.1	10		
401612	C-415-S-T-HH	-	5/8"	51.0	55.6	37.3	54.2	55.6	5.4	7.2	6.3	9.1	7.2	237	205	89	2.1	10		
401615	C-417-S-HH	-	7/8"	71.4	77.7	52.0	75.6	77.7	7.6	10.1	8.9	12.8	10.1	249	211	89	2.1	10		
401617	C-417-S-T-HH	-	7/8"	71.4	77.7	52.0	75.6	77.7	7.6	10.1	8.9	12.8	10.1	249	211	89	2.1	10		
401619	C-419-S-T-HH	-	1-1/8"	77.0	87.5	58.5	86.0	84.0	9.9	12.6	11.2	16.2	12.6	248	200	89	2.1	10		
401804	C-437-S-T-HH	-	7/8"	100.5	112.0	74.0	113.0	108.0	12.7	16.2	14.0	21.1	16.2	263	225	89	3.6	6		
401808	C-439-S-T-HH	-	1-1/8"	125.0	140.0	88.0	142.0	136.0	15.9	20.3	16.8	26.6	20.3	273	225	89	3.6	6		
401816	C-4311-S-T-HH	-	1-3/8"	138.0	155.0	96.0	155.0	150.0	17.6	22.5	18.5	29.2	22.5	278	228	121	3.6	6		
401824	C-4313-S-T-HH	-	1-5/8"	152.0	170.0	106.0	171.0	163.0	19.4	24.7	20.3	32.2	24.7	278	224	121	3.6	6		
401838	C-607-S-T-HH	-	7/8"	82.0	94.0	59.0	94.0	91.2	10.4	13.6	11.3	17.6	13.6	406	368	76	2.7	8		
401839	C-609-S-T-HH	-	1-1/8"	93.0	106.0	67.0	106.0	102.5	11.9	15.4	12.8	19.9	15.4	406	358	76	2.7	8		

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)  
 (2) Cooling capacities are published in accordance  
 with ARI 730-2001 standard  
 Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



Accurate at the time of going to print.



# Burnout Bi-flow Filters HPC-HH Series Parker Sporlan Catch-All®

Parker Sporlan Catch-All® Burnout Bi-flow Liquid Line Filter Driers ensure cleaning and decontamination of reversible systems as refrigeration, air-conditioning and heat pumps from, acids, wax, sludge, solid particles and moisture.



The design of cores and choice of the chemical components insure perfect result with small pressure drop.

**Prevention of troubles after compressor burnout of all reversible air conditioning and heat pumps is optimal with Burnout HPC Bi-flow Filter Driers.**

**HPCSG-163-S is a combination of the HPC Bi-flow Burnout Filter and See-All Sight Glass to ensure both function, cleaning and monitoring of the refrigerant and to optimize the decontamination procedure.**

## Benefits

PS (MWP)	44.8 bar (650 psig)
TS	-40°C up to +66°C

- **Leak Testing:** 45 bar in a pool
- **HPC paint:** Winter Gray 10-7069 is a U.L recognized high gloss epoxy powder coating.
- **Filtration:** 20 microns
- **Approvals:** PED 97/23/EC - article 3.3  
UL file no. SA- 1756A&B

The physical size of the **Catch-All® HPC Bi-flow Burn out filters** range allows the product to be manufactured under the PED category (art.3.3) which does not require the "CE" marking.

## HPC-HH Series Drying and Acid Capacities

HPC-HH Series	Drying Capacities kg of refrigerant <sup>(1)</sup>										Acid Capacity <sup>(2)</sup> g
	R134a		R404A		R407C		R410A		R22		
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	
HPC-16-HH	7.3	6.4	6.5	5.6	5.8	1.9	3.0	2.3	6.9	5.6	5.4
HPC-30-HH	13.6	11.7	12.7	10.8	11.1	3.6	5.7	4.3	13.2	10.8	12.1

(1) Drying capacity is the result of standard tests before and after drying from 1050 ppm to 50 ppm.

(2) Adsorption capacity of acid at 0.05 TAN (Total Acid Number).

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## Technical Data

### Burnout Bi Flow HPC Filters

#### Dimensions, Weight and Packaging

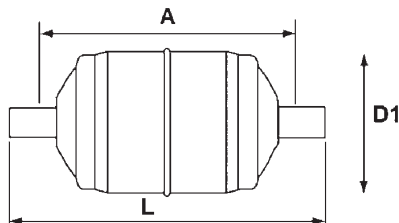
Part Number	Type	Connections Size		Dimensions mm			Weight kg	Quantity Master Box
		SAE	ODF	Overall Length L	Lay in Length A	Shell Diameter D1		
<b>Burnout Series</b>								
404180	HPC-163-HH	3/8"	-	198	-	76	1.0	25
404201	HPC-163-S-HH	-	3/8"	176	154	76	1.0	25
404220	HPC-164-HH	1/2"	-	202	-	76	1.0	25
404241	HPC-164-S-HH	-	1/2"	180	154	76	1.0	25
404260	HPC-165-HH	5/8"	-	210	-	76	1.0	25
404281	HPC-165-S-HH	-	5/8"	187	155	76	1.0	25
401369	HPC-304-HH	1/2"	-	281	-	76	1.9	8
401370	HPC-304-S-HH	-	1/2"	259	233	76	1.9	8
401371	HPC-305-HH	5/8"	-	289	-	76	1.9	8
401372	HPC-305-S-HH	-	5/8"	265	233	76	1.9	8
401373	HPC-307-S-HH	-	7/8"	280	242	76	1.9	8
<b>With Sight Glass Series</b>								
404315	HPCSG-103-S	-	3/8"	213	190.7	76	1.0	8
404316	HPCSG-163-S-HH	-	3/8"	239	216.2	76	1.0	8

#### Cooling Capacity

Part Number	Type	Liquid Line Cooling Capacity kW <sup>(1)</sup>					Suction Line Cooling Capacity kW <sup>(2)</sup>				
		R134a	R407C	R404A R507	R410A	R22	R134a	R407C	R404A R507	R410A	R22
<b>Burnout Series</b>											
404180	HPC-163-HH	16.1	16.1	11.8	17.2	17.6	1.7	2.2	2.0	2.9	2.3
404201	HPC-163-S-HH	17.9	17.9	12.9	19.0	19.3	1.9	2.4	2.2	3.2	2.5
404220	HPC-164-HH	26.7	26.7	19.9	28.4	29.1	2.8	3.7	3.3	4.8	3.8
404241	HPC-164-S-HH	28.8	28.8	20.9	30.5	31.2	3.0	4.0	3.6	5.1	4.0
404260	HPC-165-HH	33.0	33.0	24.2	35.1	35.8	3.5	4.6	4.1	5.9	4.7
404281	HPC-165-S-HH	34.7	34.7	25.5	37.2	37.9	3.7	4.8	4.4	6.3	4.9
401369	HPC-304-HH	28.1	28.1	20.7	29.8	30.5	3.0	3.9	3.5	5.0	4.0
401370	HPC-304-S-HH	30.2	30.2	21.9	31.9	32.6	3.2	4.2	3.8	5.4	4.2
401371	HPC-305-HH	31.9	31.9	23.3	34.0	34.7	3.4	4.4	4.0	5.8	4.5
401372	HPC-305-S-HH	34.0	34.0	24.9	36.2	36.9	3.6	4.7	4.3	6.1	4.8
401373	HPC-307-S-HH	36.9	36.9	27.1	39.3	40.0	3.9	5.0	4.7	6.7	5.2
<b>With Sight Glass Series</b>											
404315	HPCSG-103-S	17.9	17.9	12.9	19.0	19.3	1.9	2.4	2.2	3.2	2.5
404316	HPCSG-163-S-HH	17.9	17.9	12.9	19.0	19.3	1.9	2.4	2.2	3.2	2.5

(1) Cooling capacity in accordance with ARI 710-86 standard  
 Te = -15°C, Tc = 30°C, Δp = 0.07 bar (1 psig)

(2) Cooling capacities are published in accordance with ARI 730-2001 standard  
 Te = -4.4°C, Tc = 32°C, Δp = 0.07 bar (1 psig)



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## Correction Factors for Filters Driers

### Flow Capacity Correction Factors

#### R 134a

Condensing Temperature Tc (°C)	Evaporating Temperature Te (°C)											
	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
60	1.25	1.28	1.31	1.35	1.38	1.42	1.46	1.50	1.55	1.60	1.65	
55	1.17	1.19	1.22	1.25	1.28	1.31	1.35	1.38	1.42	1.46	1.51	
50	1.09	1.12	1.14	1.17	1.19	1.22	1.25	1.28	1.32	1.35	1.39	
45	1.03	1.05	1.08	1.10	1.12	1.14	1.17	1.20	1.23	1.26	1.29	
40	0.98	0.99	1.01	1.03	1.05	1.07	1.10	1.12	1.15	1.18	1.20	
35	0.93	0.94	0.96	0.98	1.00	1.02	1.04	1.06	1.08	1.12	1.14	
30	0.88	0.90	0.91	0.93	0.94	0.96	0.98	1.00	1.02	1.04	1.07	
25	0.85	0.86	0.87	0.89	0.90	0.92	0.94	0.95	0.97	0.99	1.01	
20	-	0.82	0.83	0.85	0.86	0.88	0.89	0.91	0.93	0.94	0.96	
15	-	-	0.80	0.81	0.82	0.84	0.85	0.86	0.88	0.90	0.91	
10	-	-	-	0.77	0.79	0.80	0.81	0.83	0.84	0.86	0.87	
5	-	-	-	-	0.76	0.77	0.78	0.80	0.81	0.82	0.84	
0	-	-	-	-	-	0.74	0.76	0.77	0.78	0.79	0.81	
-5	-	-	-	-	-	-	0.73	0.74	0.75	0.76	0.77	
-10	-	-	-	-	-	-	-	0.71	0.72	0.73	0.74	

#### R 404A / R507

Condensing Temperature Tc (°C)	Evaporating Temperature Te (°C)												
	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
60	1.73	1.78	1.84	1.90	2.00	2.10	2.20	2.30	2.40	2.55	2.70	2.90	3.15
55	1.46	1.49	1.53	1.58	1.63	1.69	1.76	1.84	1.92	2.03	2.12	2.22	2.39
50	1.27	1.30	1.33	1.36	1.41	1.45	1.50	1.56	1.61	1.68	1.76	1.84	1.93
45	1.12	1.15	1.17	1.20	1.24	1.28	1.32	1.36	1.41	1.45	1.51	1.57	1.64
40	1.02	1.04	1.06	1.08	1.11	1.14	1.17	1.21	1.25	1.29	1.33	1.38	1.43
35	0.94	0.95	0.97	0.99	1.01	1.04	1.06	1.09	1.12	1.16	1.19	1.24	1.28
30	0.86	0.87	0.89	0.91	0.93	0.95	0.97	1.00	1.02	1.05	1.08	1.11	1.15
25	0.80	0.81	0.83	0.84	0.86	0.88	0.90	0.92	0.94	0.97	1.00	1.02	1.05
20	-	0.78	0.79	0.81	0.82	0.84	0.85	0.87	0.89	0.91	0.94	0.96	0.98
15	-	-	0.74	0.76	0.77	0.79	0.80	0.82	0.84	0.86	0.87	0.90	0.92
10	-	-	-	0.72	0.74	0.75	0.76	0.77	0.79	0.81	0.82	0.84	0.86
5	-	-	-	-	0.70	0.71	0.72	0.74	0.75	0.77	0.78	0.80	0.82
0	-	-	-	-	-	0.68	0.69	0.70	0.72	0.73	0.74	0.76	0.77
-5	-	-	-	-	-	-	0.66	0.67	0.68	0.69	0.70	0.72	0.73
-10	-	-	-	-	-	-	-	0.64	0.65	0.66	0.67	0.68	0.70
-15	-	-	-	-	-	-	-	-	0.59	0.60	0.61	0.62	0.64
-20	-	-	-	-	-	-	-	-	-	0.57	0.58	0.59	0.60

#### Selection example:

Capacity Qe = 10 kW

R404A

Condensing temperature = 45°C

Evaporating temperature = -20°C

Correction factor = 1.41

Capacity ARI Qe ari = 10 x 1.41 = 14.1 kW

Report the capacity to the table page 186 (inches) and page 187 (mm).

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## Correction Factors for Filters Driers

### Flow Capacity Correction Factors

#### R 407C

Condensing Temperature Tc (°C)	Evaporating Temperature Te (°C)										
	20	15	10	5	0	-5	-10	-15	-20	-25	-30
60	1.34	1.36	1.39	1.42	1.45	1.49	1.53	1.56	1.61	1.66	1.71
55	1.23	1.25	1.27	1.30	1.33	1.36	1.38	1.42	1.46	1.50	1.54
50	1.14	1.16	1.18	1.20	1.23	1.25	1.27	1.31	1.34	1.37	1.41
45	1.07	1.08	1.10	1.12	1.14	1.16	1.19	1.21	1.23	1.27	1.30
40	1.00	1.01	1.03	1.05	1.07	1.09	1.11	1.13	1.15	1.18	1.20
35	0.95	0.96	0.97	0.99	1.00	1.02	1.04	1.06	1.08	1.10	1.13
30	0.90	0.91	0.92	0.93	0.95	0.97	0.98	1.00	1.02	1.04	1.06
25	0.86	0.87	0.88	0.89	0.90	0.92	0.93	0.95	0.97	0.98	1.00
20	-	0.83	0.84	0.85	0.86	0.88	0.89	0.90	0.92	0.93	0.95
15	-	-	0.81	0.82	0.83	0.84	0.85	0.87	0.88	0.89	0.91
10	-	-	-	0.78	0.79	0.80	0.81	0.83	0.84	0.85	0.87
5	-	-	-	-	0.76	0.77	0.78	0.79	0.80	0.81	0.83
0	-	-	-	-	-	0.74	0.75	0.76	0.77	0.78	0.80
-5	-	-	-	-	-	-	0.73	0.74	0.75	0.76	0.77
-10	-	-	-	-	-	-	-	0.71	0.72	0.73	0.74

#### R 410A

Condensing Temperature Tc (°C)	Evaporating Temperature Te (°C)												
	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
60	1.55	1.56	1.58	1.60	1.62	1.65	1.68	1.71	1.75	1.78	1.83	1.87	1.92
55	1.37	1.38	1.39	1.41	1.43	1.45	1.47	1.50	1.52	1.55	1.58	1.62	1.66
50	1.24	1.25	1.26	1.28	1.29	1.31	1.32	1.34	1.37	1.39	1.41	1.44	1.47
45	1.14	1.15	1.16	1.17	1.18	1.20	1.22	1.23	1.25	1.27	1.29	1.31	1.34
40	1.06	1.07	1.08	1.09	1.10	1.11	1.13	1.14	1.16	1.17	1.19	1.21	1.23
35	0.99	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.08	1.09	1.11	1.12	1.15
30	0.94	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01	1.03	1.04	1.06	1.07
25	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01
20	-	0.85	0.86	0.87	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.95	0.96
15	-	-	0.82	0.83	0.84	0.84	0.85	0.86	0.87	0.88	0.89	0.90	0.92
10	-	-	-	0.79	0.80	0.80	0.81	0.82	0.83	0.84	0.85	0.86	0.87
5	-	-	-	-	0.77	0.77	0.78	0.79	0.79	0.80	0.81	0.82	0.83
0	-	-	-	-	-	0.75	0.75	0.76	0.77	0.78	0.78	0.79	0.80
-5	-	-	-	-	-	-	0.73	0.73	0.74	0.75	0.75	0.76	0.77
-10	-	-	-	-	-	-	-	0.70	0.70	0.71	0.72	0.73	0.74

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## Correction Factors for Filters Driers

### Flow Capacity Correction Factors

#### R 22

Condensing Temperature Tc (°C)	Evaporating Temperature Te (°C)												
	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
60	1.24	1.25	1.26	1.28	1.30	1.32	1.34	1.36	1.38	1.40	1.42	1.43	1.49
55	1.17	1.18	1.20	1.21	1.22	1.24	1.26	1.28	1.30	1.32	1.35	1.37	1.40
50	1.11	1.12	1.14	1.15	1.16	1.18	1.20	1.21	1.23	1.25	1.27	1.30	1.32
45	1.06	1.07	1.08	1.09	1.10	1.12	1.14	1.16	1.18	1.20	1.21	1.23	1.24
40	1.01	1.02	1.03	1.04	1.05	1.07	1.08	1.09	1.11	1.13	1.14	1.16	1.18
35	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04	1.05	1.07	1.08	1.10	1.12
30	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01	1.03	1.04	1.06	1.07
25	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.98	0.99	1.00	1.01	1.02
20	-	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.97	0.98	0.99
15	-	-	0.84	0.85	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.95
10	-	-	-	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.90	0.91
5	-	-	-	-	0.80	0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88
0	-	-	-	-	-	0.78	0.79	0.80	0.81	0.82	0.82	0.84	0.85
-5	-	-	-	-	-	-	0.76	0.77	0.78	0.79	0.80	0.81	0.80
-10	-	-	-	-	-	-	-	0.74	0.75	0.76	0.77	0.78	0.79
-15	-	-	-	-	-	-	-	-	0.72	0.73	0.74	0.75	0.76
-20	-	-	-	-	-	-	-	-	-	0.68	0.69	0.72	0.73

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## Sight Glasses

Visual indication of colour, flow and refrigerant quality  
in a refrigeration or A/C system



ENGINEERING YOUR SUCCESS.

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# Index

## Sight Glasses

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# KSG Series Parker Sporlan Moisture Liquid Line Sight Glasses



**Parker Sporlan WorldSeries™ KSG moisture and Liquid Line Sight Glasses** allow a visual indication of colour, flow and refrigerant quality in a refrigeration or air-conditioning systems.

**KSG moisture and Liquid Line Sight Glasses** are a combination of brass body and large diameter fused bezel fitted in upper part and containing moisture indicator.

**KSG moisture and Liquid Line Sight Glasses** with solder connections use a long copper tubes to facilitate brazing without dismounting the glass. However we recommend to protect the glass by calorie discharger **TB2 Thermal Block™** or to wrap with a damp cloth. The sight glass can be easily removed and replaced if necessary.

**Long copper connection and removable bezel are the guarantee to install and use with maximum performances and visualisation of refrigerant quality.**

## Benefits

PS (MWP)	45 bar (652 psig)
TS	-40°C to 60°C

- **Leak Testing:** 100% helium leak tested
- **Approvals:** PED 97/23/EC - article 3.3

## Features

Suitable for all CFC / HCFC / HFC refrigerant and their associated oils.

KSG Colour Indication	Moisture Content - ppm									
	R410A		R134a		R404A - R507		R407C		R22	
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C
Green- Dry	75	135	30	60	40	85	30	70	60	120
Yellow - Wet	150	250	125	200	140	400	115	230	110	220

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[racecustomerservice@parker.com](mailto:racecustomerservice@parker.com) / [www.parker.com/race](http://www.parker.com/race)



## Technical Data

### KSG Sight Glasses

#### Dimensions, Weight and Packaging

Type	Connections		Dimensions mm			Weight Kg	Quantity Master Box
	SAE	ODF	Overall length L	Lay in length A	Height H		
KSG 2F	1/4"		81	-	28	0.2	25
KSG 3F	3/8"		81	-	28	0.2	25
KSG 4F	1/2"		83	-	33	0.2	25
KSG 5F	5/8"		93	-	35	0.4	25
KSG 6F	3/4"		97	-	38	0.4	25
KSG 2MF	1/4"		77	-	28	0.3	25
KSG 3MF	3/8"		80	-	33	0.3	25
KSG 4MF	1/2"		87	-	35	0.3	25
KSG 5MF	5/8"		91	-	39	0.4	25
KSG 2S		1/4"	147	133	28	0.1	25
KSG 3S		3/8"	147	129	28	0.1	25
KSG 4S		1/2"	161	141	35	0.2	25
KSG 5S		5/8"	161	136	35	0.2	25
KSG 6S		3/4"	171	143	35	0.3	25
KSG 7S		7/8"	175	141	45	0.4	25
KSG 9S		1" 1/8"	175	135	45	0.4	25
KSG 6mmS		6 mm	147	133	28	0.1	25
KSG 10mmS		10 mm	147	129	28	0.1	25
KSG 12mmS		12 mm	161	141	35	0.2	25
KSG 5S		16 mm	161	136	35	0.2	25
KSG4SSE		1/2"	57	43	35	0.1	50
KSG5SSE		5/8"	57	43	35	0.1	50
KSG6SSE		3/4"	57	43	35	0.1	50
KSGST5		5/8"	5/8"	16	26	0.1	75
KSGST7		3/4"	7/8"	22	26	0.1	75
KSGST9		7/8"	1" 1/8"	28	26	0.1	75
KSGST11		1" 1/8"	1" 3/8"	35	26	0.1	75
KSGST13		1" 5/8"	42	26	26	0.1	75
KSGST17		2" 1/8"	2" 1/8"	54	26	0.1	75

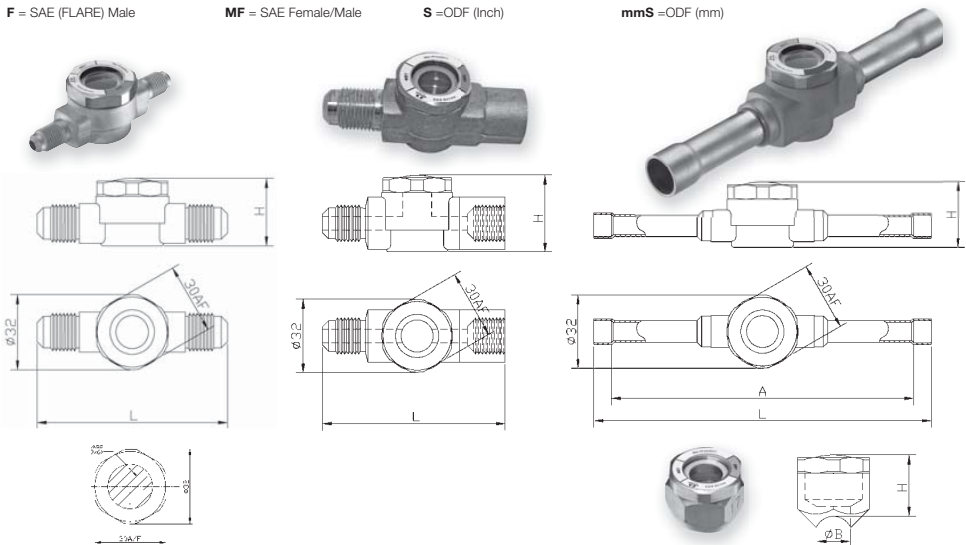
10

F = SAE (FLARE) Male

MF = SAE Female/Male

S = ODF (Inch)

mmS = ODF (mm)



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# SA Parker Sporlan SEE-ALL Moisture Liquid Line Sight Glasses



**Parker Sporlan SEE-ALL** moisture and liquid indicator combines two functions of moisture and liquid indicator into a single economical product.

It takes the guess work out of servicing refrigeration and air conditioning equipment.

The indicator is a porous filter paper impregnated with a chemical salt that is sensitive to moisture.

The plated steel and copper fittings are copper to the heavily copper plated steel body. A glass disc is inserted in the body and heated just to the melting point under carefully controlled conditions.

The indicator is inserted from the back and held in place with a slotted cylinder.

**See-All Sight Glasses** with 1/4" through 1-1/8" ODF Solder connections are constructed with long fittings made from either heavily copper plated steel or copper.

However we recommend to protect the glass by calorie discharger **TB2 Thermal Block™** or to wrap it with a damp cloth. The indicator can be easily removed and replaced if necessary.

**SEE-ALL moisture indicators with their large bezels and very sensible sensors help the users to check cleanness and dryness of systems and prevent failure of compressors.**

## Benefits

PS (MWP)	44.8 bar (650 psig)
TS	-40°C up to 66°C

- **Coating:** Polyester coating giving protection to 500 hours salt spray
- **Approvals:** UL file no. SA 3182 PED 97/23/EC - article 3.3

## Features

Suitable for all CFC / HCFC / HFC refrigerant and their associated oils.

See-All Colour Indication	Moisture Content - ppm									
	R410A		R134a		R404A - R507		R407C		R22	
	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C
Green- Dry	75	135	50	80	15	30	120	240	30	45
Yellow - Wet	150	250	200	225	90	140	280	560	90	130










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## Technical Data

### See-All Sight Glasses

#### Dimensions, Weight and Packaging

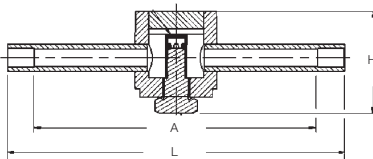
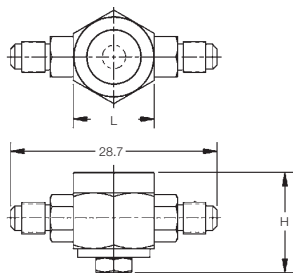
Part Number	Type	Connections		Dimensions mm			Weight Kg	Quantity Master Box
		SAE	ODF	Overall length L	Lay in length A	Height H		
<b>Connection SAE Male x Male</b>								
700000	SA-12	1/4"		73	-	35	0.2	25
700078	SA-13	3/8"		86	-	35	0.2	25
700247	SA-14	1/2"		97	-	41	0.3	25
700403	SA-15	5/8"		105	-	41	0.3	25
<b>Connection SAE Female x Male</b>								
700026	SA-12FM	1/4"		65	-	35	0.2	25
700091	SA-13FM	3/8"		75	-	35	0.2	25
700260	SA-14FM	1/2"		87	-	41	0.3	25
<b>Connection SAE Female swivel nut x Male</b>								
700195	SA-13U	3/8"		80	-	35	0.2	25
700364	SA-14U	1/2"		93	-	41	0.3	25
700468	SA-15U	5/8"		99	-	41	0.3	25
<b>Connection SAE Female swivel nut x Female swivel nut</b>								
700221	SA-13UU	3/8"		76	-	35	0.2	25
700377	SA-14UU	1/2"		90	-	41	0.3	25
700481	SA-15UU	5/8"		93	-	41	0.4	25
<b>Connection SAE Female swivel nut x Female</b>								
700117	SA-13FU	3/8"		71	-	35	0.2	25
700273	SA-14FU	1/2"		84	-	41	0.3	25
<b>Connection SAE Female swivel nut x ODF</b>								
700169	SA-13SU	3/8"		97	83	35	0.2	25
700338	SA-14SU	1/2"		107	93	41	0.3	25
700455	SA-15SU	5/8"		109	91	41	0.3	25
<b>Connection ODFx ODF</b>								
700052	SA-12S		1/4"	118	99	35	0.2	25
700130	SA-13S		3/8"	118	95	35	0.2	25
700299	SA-14S		1/2"	124	97	41	0.3	25
700416	SA-15S		5/8"	124	93	41	0.3	25
700507	SA-17S		7/8"	161	125	54	0.4	25
700546	SA-19S		1-1/8"	161	117	54	0.4	25
700585	SA-211		1-3/8"	203	154	68	0.6	12
700598	SA-213		1-5/8"	203	148	77	0.6	12
700611	SA-217		2-1/8"	203	140	90	0.8	12
<b>Connection ODFx ODF (Metric size)</b>								
700040-001	SA-12S-M6		6	118	99	35	0.2	25
700150	SA-13S-M10		10	118	95	35	0.2	25
700320	SA-14S-M12		12	124	97	41	0.3	25
700436-001	SA-15S-M16		16	124	93	41	0.3	25

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FM = SAE Female/Male

U = Male Flare X Swivel Nut

S = ODF (Inch)



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## Receivers

Vertical Liquid Receivers



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# RT Parker Sporlan

## Vertical Liquid Receivers

**RT Liquid Receivers** ensure storage of refrigerant in liquid phase for:

- Variation of load demands of thermodynamic systems
- Allows pump down regulation
- Maintenance of equipments without recover refrigerant

**RT Liquid Receivers** are made with steel tubes and end caps and are equipped with ODF, or Rotalock connections.

Some models are delivered with a rotalock valve on the outlet connection.

A very large range of models from 0.3 liter to 4.9 liters and all products with a tube diameter 152 mm are equipped with a fusible plug (221°C).



**The receiver volume must at minimum 25% larger than the total volume of refrigerant inside the circuit.**

### Benefits

PS (MWP)	34.5 bar (500 psig)
TS	-40°C up to +80°C

- **Leak Testing:** 100% bubble leak tested
- **Paint:** Powder paint giving protection to 500 hours salt spray
- **Approvals:** PED 97/23/EC  
UL file no. SA- 7946 / SA-5915  
CSA LR41494

### Features

Suitable for all CFC / HCFC / HFC refrigerants and their associated oils.

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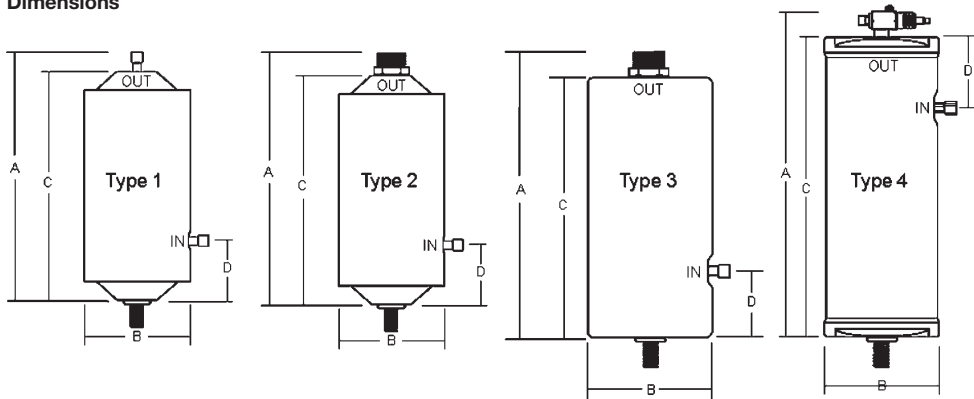
## Technical Data

### Catch-All ODF Solder Connections Feature

Part Number	Connections		Rotalock Valve	Volume Liters	Dimensions mm				CE Category	Weight Kg	Type
	Inlet ODF	Outlet			A	B	C	D			
RT-256V-TS	1/4"	1/4 ODF	-	0.28	171	64	148	51	3 art 3	0.5	1
RT-306V-TS	1/4"	1/4 ODF	-	0.53	171	76	148	51	3 art 3	0.8	1
RT-306V-TR	1/4"	3/4-16 UNF	-	0.53	171	76	148	51	3 art 3	0.9	2
RT-308V-TR	1/4"	3/4-16 UNF	-	0.70	212	76	189	51	3 art 3	0.9	2
RT-312V-TS	3/8"	3/8 ODF	-	1.36	356	76	333	51	3 art 3	1.1	1
RT-3510V2S-KS	1/4"	1/4 ODF	✓	1.39	283	89	254	51	3 art 3	2.4	4
RT-507V-TR	1/4"	3/4-16 UNF	-	2.24	219	127	197	63	I	2.5	3
RT-510V3S-KS	3/8"	3/8 ODF	✓	2.92	283	127	254	63	I	3.7	4
RT-512V-TR	3/8"	3/4-16 UNF	-	3.50	327	127	305	63	I	3.6	3
RT-612V-TR	3/8"	3/4-16 UNF	-	4.90	327	152	305	63	I	5.1	3
RT-612V3S-KS	3/8"	3/8 ODF	✓	4.90	334	152	305	63	I	5.9	4

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### Dimensions



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Parker Sporlan

RACE Catalogue Parker Sporlan R & A/C gal-3a/UK - 1/2015





## Accumulators

Suction Line Accumulators,  
Ensuring Protection of Compressors



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# VA, VPA, VCA Series Parker Sporlan Suction Line Accumulators

**Suction Line Accumulators** ensure protection of compressors in case of return of liquid refrigerant or lubricant trapped into the system.

**Suction Line Accumulators** work like a drop vapor separators and trap liquid refrigerant and oil at the bottom. They must be installed between evaporator outlet and compressor inlet.

Vapors are sucked up by the compressors at the top, liquid refrigerant and oil are sucked at the bottom through a calibrated opening.

The selection of **Suction Line Accumulators** needs to take into account the volume of liquid refrigerant and minimum capacity of the system to ensure a perfect oil return, be sure to add a volume of oil equivalent to the volume trapped and loose in the bottom, see next pages "Retention volume".



## Benefits

PS (MWP)	20.7 bar (300 psig)
TS	-40°C up to +80°C

- **Leak Testing:** 100% bubble leak tested
- **Paint:** Powder paint giving protection to 500 hours salt spray
- **Approvals:** PED 97/23/EC  
UL file no. SA-4835 / SA-5764e  
CSA LR41494

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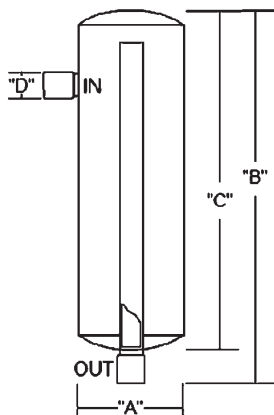
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## Technical Data

### VCA Series

are dedicated to heat pumps and refrigeration systems with pump down.

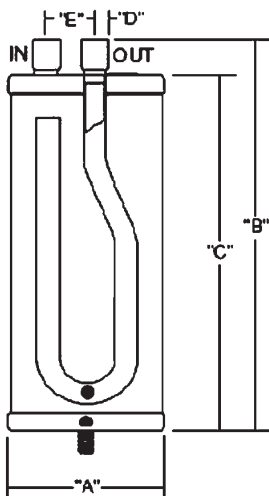


Part Number	Connections ODF	Internal volume Liters	Retention volume ml	Dimensions mm				Weight Kg	CE Category
				A	B	C	E		
VCA-32-6S	3/4"	1.98	94	76	279	254	-	1.0	3&3
VCA-33-7S	7/8"	2.55	94	76	330	305	-	1.0	I
VCA-45-7S	7/8"	2.12	94	102	314	292	-	1.9	3&3

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### VPA Series

are suction accumulators with U tube



Part Number	Connections ODF	Internal volume Liters	Retention volume ml	Dimensions mm				Weight Kg	CE Category
				A	B	C	E		
VPA-589-6SRD	3/4"	2.41	166	127	244	211	44	2.3	I
VPA-589-7SRD	7/8"	2.35	166	127	244	206	44	2.2	3 & 3
VPA-5811-6SRD	3/4"	2.91	166	127	287	254	44	3.1	I
VPA-5811-7SRD	7/8"	2.86	166	127	287	249	44	2.7	I
VPA-5812-7SRD	7/8"	3.31	166	127	327	289	44	3.5	I
VPA-5815-7SRD	7/8"	4.05	166	127	391	249	44	3.8	I
VPA-5817-7SRD	7/8"	4.61	166	127	438	400	44	4.4	I

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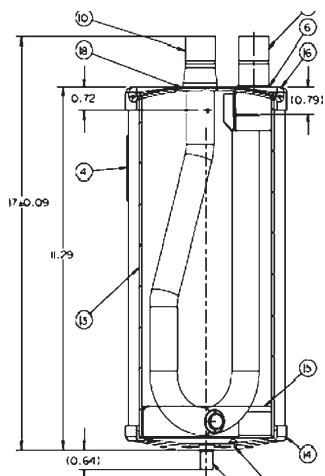


## Technical Data

### VA Series

are suction accumulators with U tube.

Part Number	Connections		Internal volume Liters	Retention volume ml	Dimensions mm				Weight Kg	CE Category
	ODF				A	B	C	E		
VA-30-4S	1/2"		0.85	25	76	210	191	41	0.8	3 & 3
VA-31-5S	5/8"		0.96	67	76	264	238	44	0.9	3 & 3
VA-32-5S	5/8"		1.13	48	76	311	292	41	1	3 & 3
VA-32-6S	3/4"		1.13	79	76	321	292	41	1	3 & 3
VA-35-5S	5/8"		1.44	60	76	383	349	41	1.2	3 & 3
VA-35-6S	3/4"		1.44	55	76	383	349	41	1.2	3 & 3
VA-44-5SRD	5/8"		2.04	98	102	273	252	64	2	3 & 3
VA-44-6SRD	3/4"		2.04	68	102	270	248	64	2	3 & 3
VA-54-6SRD	3/4"		2.55	187	127	244	216	70	2.4	I
VA-54-7SRD	7/8"		2.55	172	127	248	216	70	2.4	I
VA-55-7SRD	7/8"		3.11	172	127	273	241	76	3.2	I
VA-56-6SRD	3/4"		3.68	187	127	324	295	70	3.6	I
VA-56-7SRD	7/8"		3.68	211	127	330	298	70	3.6	I
VA-57-7SRD	7/8"		3.96	211	127	371	340	70	3.7	I
VA-57-9SRD	1-1/8"		3.96	228	127	376	340	70	3.7	I
VA-59-9SRD	1-1/8"		5.66	252	127	467	430	70	3.8	I
VA-59-11SRD	1-3/8"		5.09	281	127	468	430	70	3.8	I
VA-610-7SRD	7/8"		5.09	416	152	352	321	75	5.4	I
VA-610-9SRD	1-1/8"		5.09	546	152	356	321	75	5.4	I
VA-611-11SRD	1-3/8"		5.66	667	152	387	349	75	5.6	I
VA-615-11SRD	1-3/8"		8.21	597	152	495	457	75	7.2	I
VA-616-13SRD	1-5/8"		8.49	712	152	556	514	75	7.4	I



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## Chemicals, Lubricants, Acid Test Kit & Mastic

Wide range of lubricants, cleaners and acid test kits  
REACH compliant



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Maintenance and fixing of your installation is a rigorous task which needs only the best.

This requires a complete range of products capable to help you whenever and wherever necessary and this at the best price and efficiency possible.

Environment friendly, safety and efficiency have leaded our approach of Field service.

**Parker Virginia range is:**

- Reach compliant
- Environment friendly
- Updated on a regular basis to follow regulation changes
- Thought for adaptation to field needs

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## Lubricants / Oils

Parker lubricants range provides you with a large range of lubricants:

- Alkyl benzene
- Mineral
- POE lubricant

### What's in it for you?

- Compressor manufacturer approved
- High quality standard
- Using high performance additives
- Reach compliant

## Parker Virginia Alkyl Benzene Lubricants

Parker Virginia Alkyl Benzene Lubricants have been recommended by refrigerant producers and compressor manufacturers for use with the interim HCFC's and Ammonia refrigerants.



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### What's in it for you?

- AB150 AB200 AB300 are Ammonia compatible
- Copeland approved

Viscosity	Product Name	Part Number	Volume (Litre)
150 SUS (ISO 32)	AB 150	475422 / 475423	3.8 / 19
200 SUS (ISO 46)	AB 200	475426	3.8
300 SUS (ISO 68)	AB 300	475430	3.8

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# Virginia

## Dual Purpose Vacuum Pump Oil

**Virginia Dual Purpose Vacuum Pump Oil** has been specially formulated to seal and lubricate vacuum pumps and act as well as a highly effective flushing agent.

**Virginia Dual Purpose Vacuum Pump Oil** with its unique combination of additives gives a greater lubrication, and leaves a film which will protect pumps from rust and corrosion.

These additives not only prevent, but actually remove sludge that may have formed before the use of Virginia vacuum pump oil.



### What's in it for you?

- Lower vapor pressure
- Powerful anti-sludge
- Prevents rust and corrosion

Product Name	Part Number	Volume (Litre)
L340	475353	0.95
L341	475354	3.8

# Suniso

## Mineral Refrigeration Oils

**SUNISO** is the premium lubricant for Refrigeration and A/C applications for over 40 years, this due to the long trouble-free service records of systems that have used Suniso refrigeration Oils.



### What's in it for you?

- **SUNISO 3GS-1G** is Copeland approved
- **Low floc point.**
- **Low Paraffin wax content** minimises the potential for wax separation when used in low temperature applications
- **Low pour point** prevents oil from congealing in refrigerant lines
- **Controlled viscosity.** SUNISO maintains high film strength even when diluted with refrigerant, yet remains fluid under extreme low temperature operating conditions
- **High dielectric strength** allows the oil/refrigerant mixture to serve as an insulator between the motor windings and the body in a compressor.

Viscosity	Product Name	Part Number	Volume (Litre)
150 SUS (ISO 32)	Suniso 3GS-1G/5G	475328 / 475334	3.8/19
300 SUS (ISO 68)	Suniso 4GS-1G/5G	475330 / 475336	3.8/19
500 SUS (ISO 100)	Suniso 5GS-1G/5G	475332 / 475338	3.8/19

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# Emkarate RL POE Lubricants

**Emkarate RL** refrigeration lubricants are designed to meet the requirements of compressor manufacturers and service engineers.



## What's in it for you?

- **Emkarate RL lubricants are approved by most of compressor manufacturers.**
- **The product line features more than 30 products offered in varying viscosities between 5 cst to 220 cst and have been developed for use with a wide range of refrigerants.**
- **The Emkarate RL products ensure excellent refrigerant/lubricant solubility, optimum viscosity and lubrication performance across the extreme pressure-temperature ranges encountered in today's compressor systems.**

### Size tank available:

From 1 litre to 200 litres

### Emkarate compatibility:

All CFC, HCFCs, HFCs, carbon dioxide (R744) and hydrocarbons (e.g R-290, R600a) refrigerants. The range offers CO2 compatible reference, so that select the right reference, please contact us. Emkarate RL lubricants are not compatible with ammonia (R-717)

### Elastomers compatibility:

Generally acceptable: HNBR, NBR (Buna-N), NYLON-6.6, TEFLON

Marginal: EPDM (EPR), NEOPRENE

Generally unacceptable: Butyl rubber, Fluorocarbon Rubber (FPM) (Viton), Natural Rubber (NR)

NBR/HNBR should exceed >36% nitrile content. Elastomer compounds supplied by different suppliers can yield different results. Individual testing of specific products is highly recommended.

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# Emkarate Polyol Ester Cross Reference Table

Industry Lubricant	Viscosity		Emkarate RL Lubricant
	SUS	ISO	
Atochem Planet Elf ACD22AW	100	22	RL 22H
Atochem Planet Elf ACD32AW	150	32	RL 32H
Atochem Planet Elf ACD46AW	200	46	RL 46H
Atochem Planet Elf ACD68AW	300	68	RL 68H
Atochem Planet Elf ACD100AW	500	100	RL 100E
BVA S46	200	46	RL 46H
BVA S68	300	68	RL 68H
BVA 32	150	32	RL 32H
BVA 46	200	46	RL 46H
BVA 68	300	68	RL 68H
BVA 100	500	100	RL 100E
BVA 120	600	120	Contact us
BVA 170	850	170	RL 170H
BVA 220	1100	220	RL 220Hplus
Castrol Icematic SW 20C	100	22	RL 22H
Castrol Icematic SW 20	100	22	RL 22H
Castrol Icematic SW 22	100	22	RL 22H
Castrol Icematic SW 32	150	32	RL 32H
Castrol Icematic SW 32 C	150	32	RL 32H
Castrol Icematic SW 46	200	46	RL 46H
Castrol Icematic SW 68A	300	68	RL 68HP
Castrol Icematic SW 68	300	68	RL 68HP
Castrol Icematic SW 68C	300	68	RL 68H
Castrol Icematic E 68	300	68	RL 68H/68HP
Castrol Icematic SW 100	500	100	RL 100E
Castrol Icematic E 100	500	100	RL 100E
Castrol Icematic SW 220	1100	220	RL 220Hplus
Castrol Icematic SW 220XL	1100	220	RL 220Hplus
Carrier PP 47-10	100	22	RL 22H
Carrier PP 47-12	300	68	RL 68H
Carrier PP 47-15	100	22	RL 22H
Carrier PP 47-16	150	32	RL 32H
Carrier PP 47-17	300	68	RL 68H
Carrier PP 47-25	150	32	RL 32H
Carrier PP 47-26	300	68	RL 68H
Carrier PP 47-30	150	32	RL 32H
Carrier PP 47-31	300	68	RL 68HP
Carrier PP 47-33	500	100	RL 100E
Carrier PP 47-32	1100	220	RL 220Hplus
Carrier PP 47-34	1100	220	RL 220XL
PP23BZ102	150	32	RL 32H
PP23BZ103	300	68	RL 68HP
PP23BZ104	1100	220	RL 220Hplus

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# Emkarate Polyol Ester

## Cross Reference Table

Industry Lubricant	Viscosity		Emkarate RL Lubricant
	SUS	ISO	
PP33BZ106	150	32	RL 32H
PP23BZ107	300	68	RL 68H
Copeland 22CC	100	22	RL 323MAF
Copeland 323MAF	300	32	RL 323MAF
Copeland 170	850	170	RL 170H
CPI Solest 22	100	22	RL 22H
CPI Solest 31HE	150	32	RL 32H
CPI Solest 32	150	32	RL 32H
CPI Solest LT32	150	32	RL 32H
CPI Solest LT32NA	150	32	RL 32H
CPI Solest 46N	200	46	RL 46H
CPI Solest 46NA	200	46	RL 46H
CPI Solest 68	300	68	RL 68H
CPI Solest 68NA	300	68	RL 68H
CPI Solest 120	600	120	Contact us
CPI Solest 170	850	170	RL 170H
CPI Solest 220	1100	220	RL 220Hplus
Emery 2927-A	150	32	RL 32H
Freol Alpha 68	300	68	RL 68H
Hatco EAL 22	100	22	RL 22H
Hatco EAL 22CC	100	22	RL 323MAF
Hatco EAL 22A	100	22	RL 22H
Hatco EAL 32	150	32	RL 32H
Hatco EAL 32BC	150	32	RL 32HB
Hatco EAL 32ST	150	32	RL 32H
Hatco EAL 46	200	46	RL 46H
Hatco EAL 68	300	68	RL 68H
Hatco EAL 100	500	100	RL 100
Henry Pro-Eco 2882	100	22	RL 22H
Henry Pro-Eco 2821	150	32	RL 32H
Henry Pro-Eco 2887	200	32	RL 32H
Henry Pro-Eco 2823	200	46	RL 46H
Henry Pro-Eco 2830	300	68	RL 68H
Henry Pro-Eco 2824	500	100	RL 100E
Hitachi SR30	1100	220	RL 220Hplus
HULS Anderol RCF-E22	100	22	RL 22H
HULS Anderol RCF-E32	150	32	RL 32H
HULS Anderol RCF-E46	200	46	RL 46H
HULS Anderol RCF-E68	300	68	RL 68H
HULS Anderol RCF-E100	500	100	RL 100E
Hydro Balance ISO32	150	32	RL 32H
Hydro Balance ISO46	200	46	RL 46H
Hydro Balance ISO68	300	68	RL 68H

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# Emkarate Polyol Ester Cross Reference Table

Industry Lubricant	Viscosity		Emkarate RL Lubricant
	SUS	ISO	
Hydro Balance ISO100	500	100	RL 100E
Hydro Balance ISO220	1100	220	RL 220Hplus
Lubrizol 2916S	300	68	RL 68H
Lubrizol Lubrikuhl ISO68	300	68	RL 68H
Mobil Artic EAL 322R	150	32	RL 32H
Mobil Artic 22CC	100	22	RL 323MAF
Mobil Artic 22	100	22	RL 22H
Mobil Artic 22A	100	22	Contact us
Mobil Artic 22BC	100	22	Contact us
Mobil Artic 32	150	32	RL 32H
Mobil Artic 32BC	150	32	RL 32HB
Mobil Artic 32ST	150	32	RL 32HB
Mobil Artic 323MAF	150	32	RL 323MAF
Mobil Artic 46	200	46	RL 46H
Mobil Artic 68	300	68	RL 68H
Mobil Artic 100	500	100	RL 100E
Mobil Artic 220	1100	220	RL 220Hplus
National NPE-22	100	22	RL 22H
National NPE-32	150	32	RL 32H
National NPE-46	200	46	RL 46H
National NPE-68	300	68	RL 68H
National NPE-100	500	100	RL 100E
National NPE-170	850	170	RL 170H
National NPE-220	1100	220	RL 220Hplus
Reniso Triton SE 55	275	55	Contact us
Reniso Triton SE 120	600	120	Contact us
Reniso Triton SE 170	850	170	RL 170H
Reniso E32	150	32	RL 32H
Reniso E68	300	68	RL 68H
Reniso E100	500	100	RL 100E
Reniso Triton SEZ 22	100	22	RL 22H
Reniso Triton SEZ 32	150	32	RL 32H
Reniso Triton SEZ 80	400	80	Contact us
Reniso Triton SEZ 170	850	170	RL 170H
Summit RPE-32	150	32	RL 32H
Summit RPE-46	200	46	RL 46H
Summit RPE-68	300	68	RL 68H
Summit RPE-100	500	100	RL 100E
Suniso SL 22	100	22	RL 22H
Suniso SL 32	150	32	RL 32H
Suniso SL 46	200	46	RL 46H
Suniso SL 68	300	68	RL 68H
Suniso SL 100	500	100	RL 100E

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# Emkarate Polyol Ester Cross Reference Table

Industry Lubricant	Viscosity		Emkarate RL Lubricant
	SUS	ISO	
Texaco HFC 22	100	22	RL 22H
Texaco HFC 32	150	32	RL 32H
Texaco HFC 68	300	68	RL 68H
Texaco HFC 220	1100	220	RL 220Hplus
Texaco HFC 32NA	150	32	RL 32H
Texaco HFC 68NA	300	68	RL 68H
Texaco HFC 100NA	500	100	RL 100E
HTexaco HFC 220NA	1100	220	RL 220Hplus
Thermoking 203-413	150	32	RL 32H
Thermoking 203-426	150	32	RL 32H
Thermoking 203-433	150	32	RL 323MAF
Thermoking 203-427	750	150	Contact us
York Type K	150	32	RL 32H
York Type L	150	32	RL 32H
York Type J	200	46	RL 46H
York Type H	300	68	RL 68H
York Type P	750	150	Contact us

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# Emkarate Polyol Ester Approval List

Equipment Manufacturer	Compressor Type Model	Approved Emkarate RL Grade(s)
BITZER	Reciprocating (M)	RL 32H
	Reciprocating (H)	RL 68H
	Screw	RL 170H
BLISSFIELD	Reciprocating (M)	RL 32H
	Reciprocating	RL 68H
BOCK	Reciprocating (H, M, L)	RL 46H
	Reciprocating (H, M)	RL 68H
BOEING	Service (Aerospace)	RL 68H
CARLYLE CARRIER TRANSCOLD	Reciprocating	RL 22H
	Centrifugal (17DA, 17EA)	RL 32H
	Centrifugal (17MPS, 17FA)	RL 68H
	Centrifugal (17EX, 19EA, EB, FA, 19XL/XT)	RL 68HP
	Centrifugal (19EX, 19XR/XRT)	RL 68HP
	Centrifugal (17EX, 17FA, with external gears)	RL 68H
	Reciprocating (05G, 5K, 5F, 5H, 06D, 06E, 06CC)	RL 68H
	Screw (05T, 06T)	RL 100E
	Screw (23XL, 23XG, 30GX, 30HX)	RL 220XL
CARRIER TOYO	Reciprocating	RL 68H
	Centrifugal	RL 68HP
	Screw (06NF, 06NH)	RL 220Hplus
CARRIER TRANSCOLD	Scroll	RL 32-3MAF
COPELAND	Reciprocating & Scroll	RL 32-3MAF
	Screw	RL 170H
DORIN	Reciprocating	RL 22H, 32H, 46H & 68H
DUNHAM BUSH	Reciprocating(D-B Metic and D line)	RL 32H & 68H
	Screw	RL 100E & 170H
FRIGOPOL	Reciprocating (60-DLB-13 to 80-DLB-30)	RL 32H
GRASSO (GEA)	Reciprocating	RL 32H, 68H & 100E
	Screw	RL 100E & 170H
HARTFORD	Reciprocating (M)	RL 32H
	Reciprocating (H)	RL 68H
KOBELCO	Screw	RL 220Hplus
LOCKHEED MARTIN	Used to service Lockheed owned compressors	RL 68H
McQUAY (J&E Hall)	Centrifugal	RL 32H
	Screw	RL 68H, 68HP, 100E, 220Hplus
MYCOM	Screw	RL 100E
	Reciprocating	68H, 100E
NATO MILITARY NSN	NSN 6850-P4314-H	RL 32H
	NSN 9150-99-870-1432	RL 32HB
	NSN 9150-01-443-9390	RL 46H
	NSN 9150-01-443-9396	RL 46H
	NSN 9150-01-435-1899	RL 68H
	NSN 9150-01-410-8972	RL 68H
	NSN 9150-01-387-4469	RL 68H

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# Emkarate Polyol Ester Approval List

Equipment Manufacturer	Compressor Type Model	Approved Emkarate RL Grade(s)
PRESTCOLD	Reciprocating	RL 32-3MAF
REFCOMP	Reciprocating	RL 32H & 68H
ROLTEC	Screw	RL 68H .170H & 220Hplus
ROTOCOLD	Rotary	RL 100E
ROYCE	Reciprocating	RL 32H
SABROE	Reciprocating	RL 32H, 46H, & 68H
	Screw	RL 68H, 100E, 170H
	Screw	RL 220Hplus
THERMOKING	Reciprocating	RL 32H
	Reciprocating	RL 68H
TRANE	Reciprocating	Icematic AP32
	Scroll	RL 32HB
	Screw	RL 68H
YORK	Reciprocating	Contact us
	Centrifugal	Contact us
	Screw	Contact us

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## Oil Charging Pumps

Parker offers two kinds of **Oil Charging Pumps** which can accommodate most of containers. Both pumps are designed to pump against system pressure up to 17 bar (250 psi). VOP-H comes with an oil removal hose that is connected to the bottom of the pump. VOP-F is a higher volume pump designed to speed up jobs requiring larger amount of oil. The handy foot base increases the stability of the pump as larger amounts of oil are pumped.



### What's in it for you?

- Handy oil charging pump
- Capable to go against system pressure up to 17 bar (250 psi)
- Both foot and hand format available
- Fully compatible with all lubricants

Type	Product Name	Part Number	Quantity
Hand style oil pump	VOP-H	475368	1
Foot style oil pump	VOP-F	475367	1

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## Parker Virginia Acid Test Kit Range



Parker provides you with a complete range of Oil test kit and retrofit test kit, which is well known for its reliability and accuracy. This range is designed for detecting the presence and formation of acid in Air Conditioning and Refrigeration Systems.

### What's in it for you?

- Inexpensive and easy to use
- Reliable and accurate
- Every lubricant testable

## Parker Virginia - ETK Acid Test Kit To use with POE Oil

**ETK Acid Test Kit** is a simple and cost effective method of determining whether the acid level is within an acceptable range for POE Lubricants.

**ETK Acid Test Kit** is adjusted for the higher acid levels of POE lubricants.



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### What's in it for you?

- Inexpensive and easy to use
- One shot test, fast result
- Reliable and accurate

Product Name	Part Number	Quantity
ETK	475360	12

#### Uses:

Simply fill the bottle with oil on bottle neck and shake. If test remains purple, the oil is safe; if it turns yellow, acid is too high. The ultra sensitive color change guarantees an accurate test. Marginal conditions cause partial color changes. A Color comparison chart is packed in every box.

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# Parker Virginia - TKO Acid Test Kit

## To use with Mineral and Alkyl Benzene Oil



**TKO Acid Test Kit** is similar to the ETK test kit, but formulated for Mineral or Alkyl benzene lubricants. TKO is a test for acid contamination in the compressor's crankcase which can be indicative of lubricant decomposition.

### What's in it for you?

- Inexpensive and easy to use
- One shot test, fast result
- Reliable and accurate

Product Name	Part Number	Quantity
TKO	475365	12

### Uses:

Simply fill the bottle with oil on bottle neck and shake. If TKO test remains purple, the oil is safe: if it turns yellow, acid is too high. The ultra sensitive color change guarantees an accurate test. Marginal conditions cause partial color changes. A Color comparison chart is packed in every box.

# Parker Virginia - TA-1 Multi-Lubricant Acid Test Kit

## To use with Mineral, Alkyl benzene and POE Oil



**TA-1** acid compact test kit offers you a simple way to test different kind of lubricant. **TA-1** uses a simple scientific method capable to precisely measure the amount of acid in a lubricant sample taken from a contaminated system. The **TA-1** has pre-measured solutions supplied in bottles with screw caps for easy handling.

### What's in it for you?

- Multi lubricant testable, Mineral, Alkyl benzene, POE
- Acid content evaluation by range
- Inexpensive and easy to use
- Reliable and accurate
- One shot test, fast result

Product Name	Part Number	Quantity
TA-1	780044	1

**Uses:** Indication for use on the back of each Tests pack!

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# Parker Virginia - RTK Retrofit Test Kit

## To use with POE Oil

The **RTK Test Kit** is designed to analyse residual mineral oil content during retrofit.

The **RTK Retrofit Test Kit** gives you a simple but accurate indication of whether or not the mineral oil has been reduced to an acceptable level.



### What's in it for you?

- **RTK test kit gives a visual indication if the mineral oil content is greater than 5%, between 1 and 5 % or below 1%.**
- **Easy and effective test**
- **Inexpensive to use**
- **Compact test kit**

Product Name	Part Number	Quantity
RTK	475363	1

### Uses:

In preparation for retrofitting a system from CFC/HCFC to an HFC refrigerant, the existing mineral oil must be flushed out, circuit must be cleaned with a parker WSL Burn out filter and the crankcase refilled with a compatible lubricant.

# Parker Virginia Cleaners Range

The Parker Virginia **Cleaners Range** is designed to make easier all your tasks even the most tedious.

Our **Cleaners Range** offers you solutions for outdoor and indoor cleaning jobs, this with acidic or alkaline product, to use straight or diluted.

**"Parker Virginia, your partner for efficient jobs."**



## What's in it for you?

- Reach compliant
- Efficient and safe
- Regularly update of formulation to follow regulation change
- Biodegradable



	Acti Brite	Foam Max	Alki Foam	Pro-Klean	Acti-Klean
<b>Use</b>	Outdoor	Outdoor	Outdoor	Outdoor	Indoor
<b>PH</b>	Acidic	Alkaline	Alkaline	Alkaline	Alkaline
<b>Application:</b>					
Condenser Coils	+	+	+	+	
Evaporator Coils				+	+
Fan blades				+	
<b>Cleaning Power</b>					
Oil & Grease	+	+	+	+	
Cooking Greases		+	+	+	
Corrosion & oxides	+	+	+		
Dirt & grime	+	+	+	+	+
Dust & lint	+	+	+	+	+
Bugs	+	+	+		
Grass & cottonwood	+	+	+	+	
Tobacco stains				+	
<b>Major Benefits</b>					
Foaming	"++"	"+++"	"++"		
Brightening	"+++"	+	+		
Non-rinsing					+
Degreasing		"++"	"++"	+	
Coil protection					
Bio-degradable	+	+	+	+	+

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## Parker Virginia - Foam Max

**Parker Virginia Foam-Max** is a high-foaming biodegradable, alkaline based, outdoor condenser coil cleaner designed for extra tough cleaning jobs.

This cleaner creates thick foam when used on aluminum condenser coils that cuts through grease, grime, oil and pushes out feathers, dirt, dust, leaves and grass.



### What's in it for you?

- Condenser Cleaner
- High Foaming formulation
- Highly concentrated formulation
- Remove oxidation from the coil surface
- Degreasing action

Product Name	Part Number	Volume (Litre)	Quantity
Foam Max	475137	3.8	4

### Uses:

This highly concentrated formula can be used in lighter dilution ratios to make an economical cleaner for standard cleaning jobs.

**PH:** Alkaline / **To use:** Outdoor / Biodegradable.

## Parker Virginia - Alki Foam

**Parker Virginia Alki-Foam** is an alternative method of cleaning fin and tube surfaces of outdoor A/C and refrigeration condensers.

The expanding foam action removes contamination from heat transfer surfaces which will optimise the airflow for sustainable performance of your installation.

This biodegradable, high foaming formula cleaner is especially effective where grease accumulations have been deposited.

**Alki Foam** also removes lint, grass, leaves, insects, feathers and smoke film.



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### What's in it for you?

- Condenser cleaner
- Degreasing Action
- Foaming Formulation
- Remove oxidation

Product Name	Part Number	Volume (Litre)	Quantity
Alki Foam	475117	3.8	4

**Uses:** Alki Foam is to use with any outdoor air conditioning, heat pump or refrigeration condenser coil which will require a deep cleaning to restore performance and system efficiency.

**Applications Methods:** • Low pressure tank sprayers recommended. **PH:** Alkaline / **To use:** Outdoor / Biodegradable.

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## Parker Virginia - Acti Klean

**Parker Virginia Acti Klean** is a heavy duty combination of cleaners and surfactants in a concentrated evaporator coil cleaner. **Acti Klean** provides effective deep cleaning of evaporator coils to help restore system efficiency. This cleaner is fast acting, biodegradable, nontoxic and easy to use. Periodic usage prevents odor caused by accumulations of dirt. **Acti Klean** cleans coils of dirt, lint, hair, grease, slime accumulations, and oil. Coil must be rinsed with potable water.



### What's in it for you?

- Evaporator cleaner
- Non rising formulation
- Biodegradable

Product Name	Part Number	Volume (Litre)	Quantity
Acti Klean	475107	3.8	4

**Uses:** To use with any air conditioning, heat pump or refrigeration application which would benefit from a deep cleaning of the evaporator coil to maintain or restore the maximum efficiency possible. Also effective on electronic air cleaners and condenser coils which do not requires heavy cleaning, or where the use of more aggressive cleaners may be prohibitive.

**Applications Methods:** • High pressure sprayers • Low pressure tank sprayers • Soak, brush or sponge. **Note:** In order to take advantage of the self-rinsing nature of this product, the cooling system must be operational and capable of producing condensate.

**PH:** Alkaline / **To use:** Indoor.

## Parker Virginia - Acti Brite

Acti brite is an acid based outdoor condenser coil cleaner. It is designed to remove contamination from heat transfer surfaces and increase the airflow. Foam will wipe out stubborn deposits from air cooled condensers, leaving them clean and bright. The liquid penetrates deep into the recesses of the coils and the expanding foam will remove contamination such as lint, grass, leaves, insects, feathers and smoke film so that it will be rinsed away easily with water.



### What's in it for you?

- Condenser cleaner
- Brightens Aluminum
- Foaming formulation

Product Name	Part Number	Volume (Litre)	Quantity
Acti Brite	475096	3.8	4

**Uses:** Deep cleaning of outdoor condenser coils to restore efficiency and increase performance of the system.

**Applications Methods:** • Low pressure, acid resistant tank sprayers are recommended. • Regardless of application method, avoid inhalation of mist or contact of liquid or mist with skin.

**PH:** Acidic / **To use:** Outdoor.



## Parker Virginia - ProKlean MPC

The special formulation of this biodegradable, multi-purpose cleaner provides effective removal of stubborn deposits which may have proven resistance to other cleaners. Proklean MPC is ideal for difficult cleaning tasks such as cleaning electronic air cleaners, permanent air filters, evaporator and condenser coils, and other applications which require deep penetrating action.

**ProKlean MPC** is fully compatible with the use of high pressure washers.



### What's in it for you?

- Evaporator and condenser cleaner
- Fan blades cleaner
- Electronic air filter cleaner

Product Name	Part Number	Volume (Litre)	Quantity
Proklean MPC	475158	3.8	4

#### Uses:

Any application requiring either a light or deep cleaning from dirt, dust, grease, oil or virtually any other substance encountered in the HVAC industry. Such applications include condensers, evaporators, electronic air cleaners.

#### Applications Methods:

- Low pressure, tank sprayers are recommended for strong dilutions
- By hand with protective gloves with weaker dilutions.

**PH:** Alkaline / **To use:** Outdoor / Biodegradable.

## Parker Virginia - Metal Safe Ice Machine Cleaner

Metal Safe Ice machine is used to clean all types of ice machines as cube, tube or flake, and for descaling commercial dishwashers. It will restore ice machine efficiency and taste by removing the lime scale build up that develops on ice machines.

Metal safe ice machine cleaner is safe to use on nickel and tin plated evaporators.



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### What's in it for you?

- Leaves no after taste
- Leaves no odor

Product Name	Part Number	Volume (Litre)	Quantity
H420	475068	0.23	24
H421	475071	3.80	4

#### Uses:

To use with any standard ice machine, steam table or commercial dishwasher application which requires the removal of scale to help restore efficiency?

**Applications Methods:** • Circulation pump • Brush on hard to clean parts.

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# Parker Virginia - Gas Leak Locator

This **Gas Leak Detector** is a high viscosity formula, allowing it to be used on higher temperature applications. A stream of bubbles will form in a few seconds if a leak is present.



## What's in it for you?

- **High viscosity formula for higher temperature applications**
- **Non-freezing formulation makes it also effective on all low temperature applications.**
- **Florescent dye for high visibility**
- **Ticks to fittings and joints**
- **Brush include**

Product Name	Part Number	Volume (Litre)	Quantity
GL6	475053	0.23	24

### Uses:

Any air conditioning, heat pump or refrigeration system in which leaks are possible, either from an installation, or where loss of the refrigerant charge indicates a leak is present.

### Applications Methods:

- Gas Leak Locator may be applied by brushing the liquid on fittings and joints with the supplied brush.

# Parker Virginia - Locator Leak Detector "No bubbles, No leak"

An extremely effective leak locator contained in an easy to use package. Due to its unique formulation, this leak detector is more accurate than electronic leak detectors and can even detect microscopic system leaks within seconds. Simply spray it on connections and look for the bubbles. Locator has been formulated with a red fluorescent dye making visibility easier, even in low light. As it comes in a handy spray bottle, it is ideal for checking leaks in hard to reach areas, such as inside coils and on fittings that are not easy to reach.



## What's in it for you?

- **Design to search leakage on hard reach area**
- **Florescent dye for high visibility**

Product Name	Part Number	Volume (Litre)	Quantity
LOC-LEAK LOCATOR	475054	1	4

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## Parker Virginia - Sprayer

This **Sprayer** is economical and 100% polyethylene made of. The sturdy tank, pump, nozzle and wand make spraying clean and easy. Translucent tanks make it easy to check the chemical level.



Product Name	Part Number	Volume (Litre)	Quantity
Spray Pump	475191	3.8	1

## Parker Virginia - CDC Anticlog Drain Pan Treatments

**CDC Anti-Clog** is a simple to use highly effective biocide. This condensate drain pan treatment controls the growth of algae, slime and inhibits the growth of harmful bacteria, including those causing Legionnaires disease.

Unlike tablets, the plastic encapsulated unit will not block the condensate drain.

A corrosion inhibitor is also released to provide rust protection to all metal parts exposed to the condensate.

Depending on the climate and the amount of condensate produced, **CDC Anti-Clog** will provide effective treatment of condensate for up to 4 months of protection.



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### What's in it for you?

- **Effective against Legionella.**
- **Reduces odors by eliminating slime bacteria waste.**
- **Long lasting, Effective treatment of condensate for up to 4 months**
- **Easy to install.**
- **Keeps drain pans clear, preventing pan overflows.**
- **Allows for placement either in pan or on the side of the coil.**
- **Inhibits corrosion in drain pans.**

Product Name	Part Number	Capacity kW	Weight kg	Quantity
ANTICLOG AT/C	475010	17-52	0.021	12
ANTICLOG FT/C	475015	Up to 17	0.059	24

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# Parker Virginia Foam Insulation Tape

Insulation tape will prevent pipe to sweat.

**Foam Insulation Tape** can also be used to reduce heat loss on hot pipes below 71°C. The Tape Easily cuts into pieces and molds around fittings and valves, eliminating the high costs of specialty cast forms.

**Foam Insulation Tape** adheres to clean metal and to itself.

Virginia Cork Insulation Tape is similar to the Presstite brand and is a lower cost alternative to the premium brand.



## What's in it for you?

- Prevents condensation drip from forming on pipes and tubing
- Easy to cut in piece for molding around hard to wrap fitting

Product Name	Part Number	Quantity	Size - Type
K501	475289	12	(0.3 cm x 7.5cm x 9m)
K502	475290	12	(0.3 cm x 7.5 cm x 9 m) Polyethylene

### Uses:

Foam insulation tape is to be used where pipes or tubing need to be insulated to prevent heat transfer or condensate drip.

### Applications Methods:

• Adhering surfaces should be clean and dry • Wrap the tape in a spiral around the tubing, butting the edges together so that no tubing is showing through. **Note:** Do not stretch. To cover valves and fittings, cut the tape into smaller pieces and apply. • Subsequent wrappings can be made as required. Reverse the direction of wrap with each subsequent wrapping.

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# Presstite & Virginia Cork Insulation Tape

**Presstite** is the premium product of its type. It may be used for either hot or cold temperature applications within its continuous duty service temperature range of -29°C to 93°C.

**Presstite** is designed to be use on pipes or tubes, in commercial or residential buildings, A/C units, refrigerated units and other similar types of applications.

**Presstite** will stop dripping caused by pipe condensation, will adhere to metal and will not crack or dry out.

**Presstite** is self an adhering tape.



## What's in it for you?

- **High quality formulation to better stick to pipes and fitting**
- **Prevents condensation drip from forming on pipes and tubing**
- **Easy to cut in piece for molding around hard to wrap fitting**

Product Name	Part Number	Quantity	Size - Type
PT1	475291	1	(0.3 cm x 7.5cm x 9m)
VCT2	475294	12	Bulk (0.3 cm x 7.5cm x 9m)

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### Uses:

To use with any application in which piping or tubing need to be insulated to prevent heat transfer or condensate formation and drip.

### Applications Methods:

- Adhering surfaces should be clean and dry
- Wrap the tape in a spiral around the tubing, butting the edges together with your fingers as you go. Note: Do not stretch. Do not overlap edges.
- Subsequent wrappings can be made as required. Reverse the direction of wrap with each subsequent wrapping.

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# Parker Virginia-Prestitite Permagem Sealing Gum

These sealing gums are a non-hardening, water-resistant, formulated from the highest quality materials.

They are non-staining, non-bleeding, and have excellent adhesion, they are supplied in ready-to-use extruded beads or bulk slugs.

**Parker Virginia-Prestitite Permagem** is specifically designed to exclude dirt, dust and moisture from joints.

Constant exposure to extreme conditions (like those encountered by trailers) is one of the most difficult industrial sealing problems that can be solved with these sealing gums.

Also excellent for use in sealing around window units and refrigerated cases.



## What's in it for you?

- **Seals out moisture, dust and dirt.**
- **Resistant to water, water vapor, temperature, alcohol, and mild acids or caustics.**
- **Service temperature range from -34°C to 70°C.**
- **Excellent adhesion to wood, metal, plastics, glass, as well as many other surfaces.**
- **On-staining, non-drying**

Product Name	Part Number	Quantity	Size - Type - Weight
PP33	475298	1	Cords (0.4 cm x 30 m)
PP36	475301	12	Cords (0.95 cm x 7.5 m)
PP22	475296	24	Slugs 1 kg

### Applications Methods:

- Adhering surfaces should be clean and dry • Place Permagem over opening to be sealed and gently press into place with thumbs.

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# Parker Virginia Insulation Mastic

**Parker Virginia Insulation Mastic** is asphalt emulsion containing a highly efficient cellular material for reducing heat transfer and conductivity. It is designed specifically for coating large area surfaces to prevent moisture condensation and dripping.

Once dry, insulation mastic is waterproof and will form a coating that is resistant to strong acids and alkaline.

**Parker Virginia Insulation Mastic** is an excellent weather proofer. It is non-poisonous, non-corrosive and odorless.

**Parker Virginia Insulation Mastic** has a temperature range -29°C to 93°C, and will not flow below 121°C.



## What's in it for you?

- Reduces heat transfer and conductivity.
- Forms a coating that is resistant to strong acids and alkalines.
- Dries non-toxic, non-poisonous, odorless and waterproof.

Product name	Part Number	Volume (Litre)	Quantity
PM11	475311	3.8	1

### Applications Methods:

- Can be brushed on using a stiff bristle brush (such as a whiskbroom).
- Can be troweled on in the same manner as wall plaster.

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**Parker Sporlan**

RACE Catalogue Parker Sporlan R & A/C gal-3a/UK - 1/2015

# Parker Virginia-Thermal Mastic Heat Conductor

**Parker Virginia-Thermal Mastic** is heat conducting compound that increases heat transfer four times the amount of mechanical mounting alone.

The result is a faster response times for expansion valves and controls when connecting the sensor bulb to the suction line, better heat transmission between coils and liners.

**Parker Virginia-Thermal Mastic** has a working temperature range from -76°C to 100°C.



## What's in it for you?

- Stable between -76°C to 100°C.
- Increases heat transfer between surfaces 4 times over mechanical mounting alone.
- Replaces solder for heat transmission.

Product Name	Part Number	Volume (Litre)	Quantity
PM8	475321	0.23	1
PM21	475313	3.8	4
PM25	475315	19	1
PM50	475319	190	1

### Applications Methods:

- Can be applied by squeezing tube or by troweling in bulk quantities. Protective gloves should be worn.

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# Parker Virginia-Thermal Block Heat Discharger

**Parker Virginia-Thermal Block** effectively absorbs surface heat generated by welding, brazing or soldering. Heat can transmit along pipes and other surfaces and damage sensitive materials and painted surfaces. **Thermal Block** helps prevent warping, buckling or other distortion on light gauge material, as well as preventing blistering, discoloration or cracking.

Now there is no longer any need for wet rags and ice blocks. **Thermal Block** is applied directly out of the tube onto the surface that needs protection (expansion valve, filter drier, sight glass and ball valve).

**Parker Virginia-Thermal Block** is easily cleaned up with water and can be applied to all metals.



## What's in it for you?

- Effectively absorbs heat from welding, brazing or soldering.
- Can prevent warping, buckling or other distortion of light gauge material.
- Can prevent discoloration, blistering or cracking.
- Water soluble.
- Non toxic, harmless to skin, odourless and asbestos free.
- Adheres to surface for horizontal, vertical or overhead application.
- Can be applied to all metals.

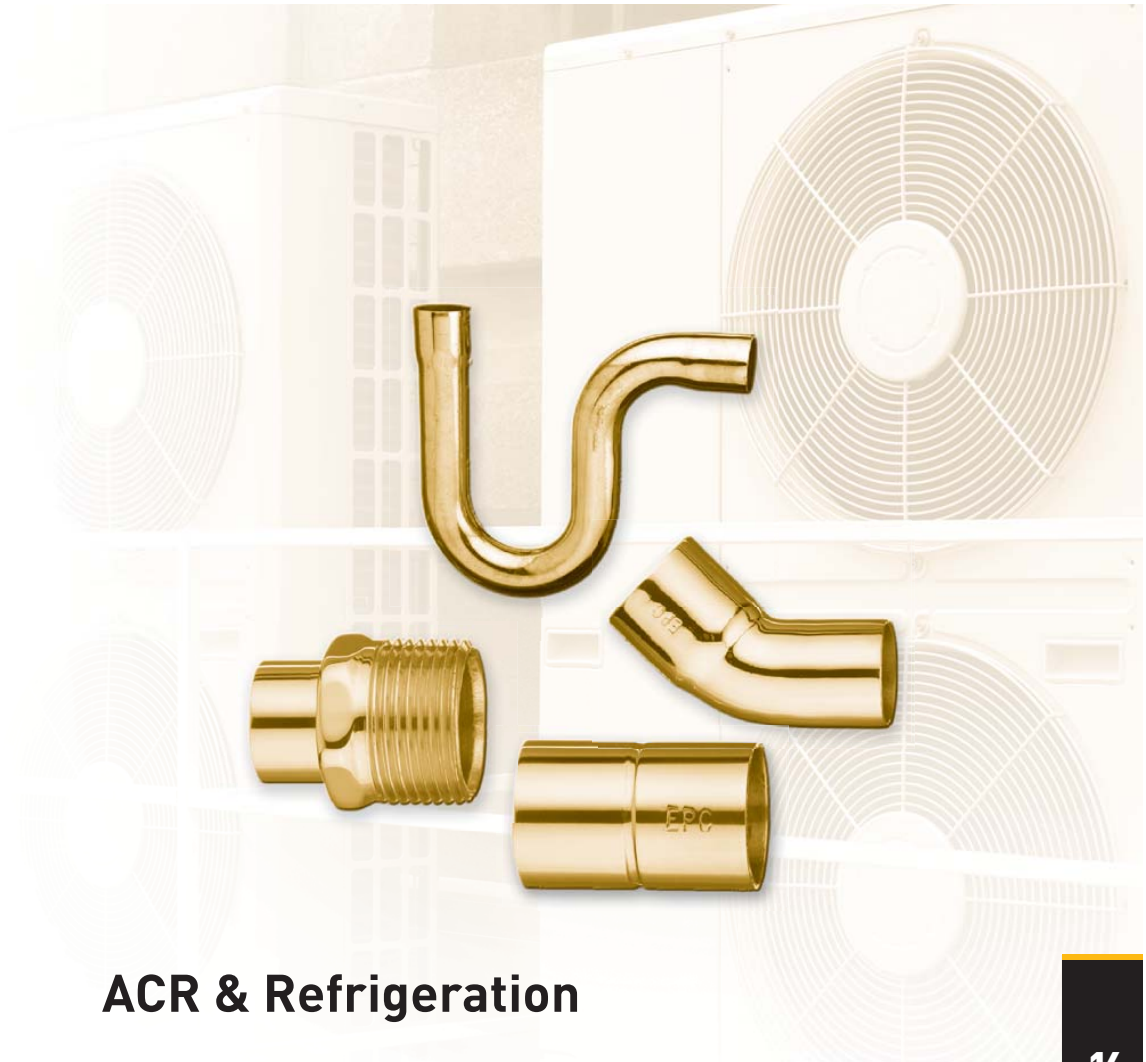
Product Name	Part Number	Volume (Litre)	Quantity
TB2	475322	0.33	12

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### Applications Methods:

- Apply directly out of tube in thick bead on any clean dry surface.





## ACR & Refrigeration

14

Copper Fitting Range for HVAC Application



ENGINEERING YOUR SUCCESS.

# Refrigeration, Air conditioning, Heat Pump

Copper tube is widely used in air conditioning and refrigeration systems because of its high thermal conductivity which is about 8 times more than aluminum tube.

## Copper has gained new popularity in its modern form:

- Light,
- Strong,
- Corrosion-resistance fittings.

Its long lasting and maintenance free characteristics make copper the leading choice for heating, cooling and other mechanical systems.

## Parker offers an excellent quality of copper fittings which provide an economic and efficient method of piping.

- Manufactured to meet or exceed European and international standard.
- Made from premium quality copper.

## Copper fittings require a high level of reliability, and cleanliness, our range totally comply with the highest standard in the HVAC world.

- High reliability product.
- Comply with ASME B16.22 and EN378.
- Compatible for use with all CFC, HFC, HCFC.



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# HVAC Market

## Description of Applications

We offer a wide variety of copper fittings that are used in both a domestic and commercial applications of air conditioning, refrigeration and heating.

## Functions Description

### KEY - Symbol of joint ends

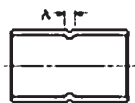
**C** Solder joint fitting end made to receive copper tube diameter.

**FTG** Solder joint fitting end made to copper tube diameter.

**F** Internal ANSI Standard Taper Pipe Thread-Female.

**M** External ANSI Standard Taper Pipe Thread-Male.

## 100 Series - Coupling with stop C x C



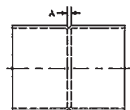
Coupling with stop C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
100	10020622	3/8"	50	3/32"	-	-	0.008
100	10020155	5/8"	100	3/32"	-	-	0.024
100	10020156	3/4"	25	3/32"	-	-	0.041
100	10020157	7/8"	50	3/32"	-	-	0.056
100	10020158	1" 1/8	25	3/32"	-	-	0.122
100	10020159	1" 3/8	20	3/32"	-	-	0.144
100	10020160	1" 5/8	10	3/32"	-	-	0.216
100	10020161	2" 1/8	5	3/32"	-	-	0.391
100	10020162	2" 5/8	5	3/32"	-	-	0.624
100	10020163	3" 1/8	5	3/32"	-	-	0.909
100	10020164	3" 5/8	1	3/32"	-	-	1.369

\* The indication of weight is approximate.

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## 100-RS Series - Coupling with roll stop C x C



Coupling with roll stop C x C							
Figure Ref	Parker P/N	O.D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
100-RS	10020109	3/16"	50	1/16"	-	-	0.002
100-RS	10020956	1/4"	50	1/16"	-	-	0.004
100-RS	10020110	5/16"	50	1/16"	-	-	0.006
100-RS	10020694	3/8"	50	3/32"	-	-	0.008
100-RS	10020690	1/2"	50	3/32"	-	-	0.015
100-RS	10020603	5/8"	100	3/32"	-	-	0.027
100-RS	10020604	3/4"	25	3/32"	-	-	0.041
100-RS	10020122	7/8"	50	3/32"	-	-	0.056
100-RS	10020606	1"	10	3/32"	-	-	0.084
100-RS	10020608	1" 1/8	25	3/32"	-	-	0.122
100-RS	10020610	1" 3/8	20	3/32"	-	-	0.149
100-RS	10020612	1" 5/8	10	3/32"	-	-	0.213
100-RS	10020614	2" 1/8	5	3/32"	-	-	0.391

\* The indication of weight is approximate.

## 101 Series - Coupling without stop C x C



Coupling without stop C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
101	10020624	1/4"	50	11/16"	-	-	0.004
101	10020169	3/8"	50	23/32"	-	-	0.008
101	10020170	1/2"	50	55/64"	-	-	0.015
101	10020171	5/8"	100	1" 3/32	-	-	0.027
101	10020172	3/4"	25	1" 21/64	-	-	0.041
101	10020173	7/8"	50	1" 19/32	-	-	0.056
101	10020174	1" 1/8	25	1" 29/32	-	-	0.122
101	10020175	1" 3/8	20	2" 1/32	-	-	0.149
101	10020176	1" 5/8	10	2" 17/64	-	-	0.213
101	10020616	2" 1/8	5	2" 49/64	-	-	0.391
101	10020178	2" 5/8	5	3" 1/32	-	-	0.616
101	10020179	3" 1/8	5	3" 13/32	-	-	0.912
101	10020180	3" 5/8	1	3" 29/32	-	-	1.352

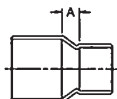
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## 101-R Series - Reducer coupling with stop C x C



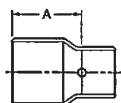
Reducer coupling with stop C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
101-R	10020625	3/8" x 1/4"	50	5/32"	-	-	0.008
101-R	10020112	3/8" x 5/16"	50	3/32"	-	-	0.008
101-R	10020111	5/16" x 1/4"	50	3/32"	-	-	0.007
101-R	10020113	1/2" x 3/8"	50	3/16"	-	-	0.017
101-R	10020114	1/2" x 1/4"	50	1/4"	-	-	0.019
101-R	10020115	5/8" x 1/2"	50	5/32"	-	-	0.024
101-R	10020116	5/8" x 3/8"	50	1/4"	-	-	0.026
101-R	10020117	5/8" x 1/4"	50	5/32"	-	-	0.027
101-R	10020118	3/4" x 5/8"	25	5/32"	-	-	0.040
101-R	10020119	3/4" x 1/2"	25	7/32"	-	-	0.033
101-R	10020120	3/4" x 3/8"	25	5/16"	-	-	0.043
101-R	10020121	7/8" x 3/4"	50	3/16"	-	-	0.055
101-R	10020123	7/8" x 5/8"	50	3/16"	-	-	0.061
101-R	10020124	7/8" x 1/2"	50	21/64"	-	-	0.054
101-R	10020125	7/8" x 3/8"	50	7/16"	-	-	0.053
101-R	10020126	1" 1/8 x 7/8"	25	13/32"	-	-	0.098
101-R	10020127	1" 1/8 x 3/4"	25	3/8"	-	-	0.102
101-R	10020128	1" 1/8 x 5/8"	25	7/16"	-	-	0.104
101-R	10020129	1" 1/8 x 1/2"	25	1/2"	-	-	0.098
101-R	10020130	1" 3/8 x 1" 1/8	10	5/16"	-	-	0.152
101-R	10020131	1" 3/8 x 7/8"	10	15/32"	-	-	0.134
101-R	10020132	1" 3/8 x 5/8	10	41/64"	-	-	0.176
101-R	10020133	1" 5/8 x 1 3/8	10	11/32"	-	-	0.220
101-R	10020134	1" 5/8 x 1 1/8	10	7/16"	-	-	0.220
101-R	10020135	1" 5/8 x 7/8"	10	21/32"	-	-	0.218
101-R	10020136	1" 5/8 x 5/8	10	25/32"	-	-	0.219
101-R	10020137	2" 1/8 x 1 5/8	10	13/32"	-	-	0.366
101-R	10020138	2" 1/8 x 1 3/8	10	21/32"	-	-	0.393
101-R	10020139	2" 1/8 x 1" 1/8	10	25/32"	-	-	0.383
101-R	10020140	2" 1/8 x 7/8"	10	1"	-	-	0.408
101-R	10020141	2" 1/8 x 5/8	10	1" 1/8	-	-	0.420
101-R	10020142	2" 5/8 x 2" 1/8	5	15/32"	-	-	0.639
101-R	10020143	2" 5/8 x 1 5/8	5	7/8"	-	-	0.666
101-R	10020144	2" 5/8 x 1 3/8	5	15/16"	-	-	0.664
101-R	10020145	2" 5/8 x 1" 1/8	5	1" 1/8	-	-	0.691
101-R	10020146	3 1/8 x 2 5/8	2	1/2"	-	-	0.946
101-R	10020147	3 1/8 x 2" 1/8	2	13/16"	-	-	0.991
101-R	10020148	3 1/8 x 1 5/8	2	1" 5/32	-	-	1.106
101-R	10020149	3 5/8" x 3 1/8	1	1/2"	-	-	1.426

\* The indication of weight is approximate.

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## 118 Series - Fitting reducer FTG x C



Fitting reducer FTG x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
118	10020291	1/4" x 1/8"	50	33/64"	-	-	0.004
118	10020292	3/8" x 1/4"	50	1/2"	-	-	0.007
118	10020293	1/2" x 3/8"	50	17/32"	-	-	0.015
118	10020294	1/2" x 1/4"	50	5/8"	-	-	0.016
118	10020295	5/8" x 1/2"	50	23/32"	-	-	0.022
118	10020296	5/8" x 3/8"	50	47/64"	-	-	0.022
118	10020297	3/4" x 5/8"	25	25/32"	-	-	0.038
118	10020298	3/4" x 1/2"	25	29/32"	-	-	0.029
118	10020299	3/4" x 3/8"	25	15/16"	-	-	0.038
118	10020300	7/8" x 3/4"	50	15/16"	-	-	0.052
118	10020301	7/8" x 5/8"	50	1"	-	-	0.057
118	10020302	7/8" x 1/2"	50	1" 1/16"	-	-	0.037
118	10020303	7/8" x 3/8"	50	1" 1/8"	-	-	0.049
118	10020304	1" 1/8" x 7/8"	25	1" 3/16"	-	-	0.092
118	10020305	1" 1/8" x 3/4"	25	1" 7/32"	-	-	0.089
118	10020306	1" 1/8" x 5/8"	25	1" 15/32"	-	-	0.095
118	10020307	1" 1/8" x 1/2"	25	1" 3/8"	-	-	0.088
118	10020308	1" 3/8" x 1" 1/8"	10	1" 1/4"	-	-	0.150
118	10020309	1" 3/8" x 7/8"	10	1" 11/32"	-	-	0.118
118	10020310	1" 3/8" x 5/8"	10	1" 15/32"	-	-	0.169
118	10020311	1" 5/8" x 1" 3/8"	10	1" 19/64"	-	-	0.206
118	10020312	1" 5/8" x 1" 1/8"	10	1" 17/32"	-	-	0.208
118	10020313	1" 5/8" x 7/8"	10	1" 11/16"	-	-	0.200
118	10020314	1" 5/8" x 5/8"	10	1" 7/8"	-	-	0.207
118	10020315	2" 1/8" x 1" 5/8"	10	1" 11/16"	-	-	0.374
118	10020316	2" 1/8" x 1" 3/8"	10	1" 15/16"	-	-	0.360
118	10020317	2" 1/8" x 1" 1/8"	10	2" 1/8"	-	-	0.357
118	10020318	2" 1/8" x 7/8"	10	2" 11/32"	-	-	0.403
118	10020319	2" 1/8" x 5/8"	10	2" 7/16"	-	-	0.426
118	10020320	2" 5/8" x 2" 1/8"	5	1" 15/16"	-	-	0.643
118	10020321	2" 5/8" x 1" 5/8"	5	2" 1/4"	-	-	0.666
118	10020322	2" 5/8" x 1" 3/8"	5	2" 5/16"	-	-	0.628
118	10020323	2" 5/8" x 1" 1/8"	5	2" 17/32"	-	-	0.655
118	10020324	3" 1/8" x 2" 5/8"	2	2" 3/32"	-	-	0.893
118	10020325	3" 1/8" x 2" 1/8"	2	2" 33/64"	-	-	0.948
118	10020326	3" 1/8" x 1" 5/8"	2	2" 11/16"	-	-	1.027
118	10020327	3" 1/8" x 1" 3/8"	2	2" 25/32"	-	-	1.029
118	10020328	3" 5/8" x 3" 1/8"	1	2" 1/4"	-	-	1.336
118	10020329	3" 5/8" x 2" 5/8"	1	2" 7/16"	-	-	1.344
118	10020340	3" 5/8" x 2" 1/8"	1	2" 51/64"	-	-	1.380

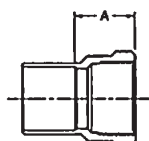
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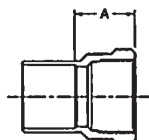
## 103 Series - Female adaptor C x F



Female adaptor C x F - NPT Thread							
Figure Ref	Parker P/N	O. D. Size Inch x NPT Thread	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
103	10020000	1/4" x 1/4"	50	1/2"	-	-	0.033
103	10020666	3/8" x 1/4"	50	15/32"	-	-	0.031
103	10020001	3/8" x 1/2"	50	25/32"	-	-	0.078
103	10020002	3/8" x 3/8"	50	15/32"	-	-	0.043
103	10020003	3/8" x 1/8"	50	11/32"	-	-	0.024
103	10020004	1/2" x 3/8"	50	15/32"	-	-	0.052
103	10020005	1/2" x 3/4"	25	3/4"	-	-	0.121
103	10020006	1/2" x 1/2"	50	7/8"	-	-	0.082
103	10020007	1/2" x 1/4"	50	15/32"	-	-	0.041
103	10020008	5/8" x 1/2"	50	7/8"	-	-	0.093
103	10020009	5/8" x 3/4"	25	29/32"	-	-	0.121
103	10020010	5/8" x 3/8"	50	9/16"	-	-	0.048
103	10020011	5/8" x 1/4"	50	15/32"	-	-	0.047
103	10020012	3/4" x 3/4"	25	1"	-	-	0.143
103	10020013	3/4" x 1/2"	25	3/4"	-	-	0.102
103	10020014	7/8" x 3/4"	25	23/32"	-	-	0.142
103	10020015	7/8" x 1"	20	1"7/32"	-	-	0.218
103	10020016	7/8" x 1/2"	25	19/32"	-	-	0.088
103	10020017	1"1/8 x 1"	20	31/32"	-	-	0.226
103	10020018	1"1/8 x 1"1/4	10	1"7/32"	-	-	0.299
103	10020019	1"1/8 x 3/4"	25	43/64"	-	-	0.159
103	10020020	1"1/8 x 1/2"	10	11/16"	-	-	0.239
103	10020021	1"3/8 x 1"1/4	10	1"3/32"	-	-	0.369
103	10020022	1"3/8 x 1"1/2	10	1"19/64"	-	-	0.431
103	10020023	1"3/8 x 1"	10	55/64"	-	-	0.238
103	10020024	1"5/8 x 1"1/2	10	1"5/32"	-	-	0.404
103	10020025	1"5/8 x 2"	5	1"7/16"	-	-	0.678
103	10020026	2"1/8 x 2"	5	1"1/4"	-	-	0.667
103	10020027	2"5/8 x 2"1/2	2	1"1/2"	-	-	1.228

\* The indication of weight is approximate.

## 103-2 Series - Female adaptor FTG X F



Female adaptor FTG X F - NPT Thread							
Figure Ref	Parker P/N	O. D. Size Inch x NPT Thread	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
103-2	10020028	3/8 X 1/4	50	29/32	-	-	0.030
103-2	10020029	1/2 X 3/8	50	1 1/16	-	-	0.049
103-2	10020030	5/8 X 1/2	50	1 3/8	-	-	0.088
103-2	10020031	7/8 X 3/4	25	1 11/16	-	-	0.143
103-2	10020032	1 1/8 X 1	20	1 31/32	-	-	0.214
103-2	10020033	1 3/8 X 1 1/4	10	2 5/32	-	-	0.324
103-2	10020034	1 5/8 X 1 1/2	10	2 7/16	-	-	0.437
103-2	10020035	2 1/8 X 2	5	2 19/32	-	-	0.641

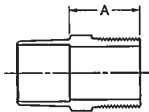
\* The indication of weight is approximate.

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## 104 Series - Male adaptor C x M



Male adaptor C x M - NPT Thread							
Figure Ref	Parker P/N	O. D. Size Inch x NPT Thread	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
104	10020036	1/4" x 1/8"	50	13/32"	-	-	0.019
104	10020037	1/4" x 3/8"	50	3/4"	-	-	0.043
104	10020038	1/4" x 1/4"	50	7/16"	-	-	0.034
104	10020039	3/8" x 1/4"	50	15/32"	-	-	0.027
104	10020040	3/8" x 1/2"	50	7/8"	-	-	0.069
104	10020041	3/8" x 3/8"	50	63/64"	-	-	0.06
104	10020042	3/8" x 1/8"	50	17/32"	-	-	0.014
104	10020043	1/2" x 3/8"	50	7/8"	-	-	0.041
104	10020044	1/2" x 3/4"	25	1 11/32"	-	-	0.143
104	10020045	1/2" x 1/2"	50	15/16"	-	-	0.072
104	10020046	1/2" x 1/4"	50	5/8"	-	-	0.039
104	10020047	5/8" x 1/2"	50	19/32"	-	-	0.064
104	10020048	5/8" x 1"	20	19/32"	-	-	0.24
104	10020049	5/8" x 3/4"	25	13/16"	-	-	0.135
104	10020050	5/8" x 3/8"	50	3/4"	-	-	0.053
104	10020051	5/8" x 1/4"	50	5/8"	-	-	0.059
104	10020052	3/4" x 3/4"	25	1"1/8"	-	-	0.129
104	10020053	3/4" x 1/2"	25	11/16"	-	-	0.075
104	10020054	7/8" x 3/4"	25	13/16"	-	-	0.118
104	10020055	7/8" x 1"	20	1"31/64"	-	-	0.234
104	10020056	7/8" x 1/2"	25	59/64"	-	-	0.106
104	10020057	1"1/8 x 1"	20	27/32"	-	-	0.17
104	10020058	1"1/8 x 1"1/2	10	1"29/32"	-	-	0.544
104	10020059	1"1/8 x 1"1/4	10	1"21/32"	-	-	0.399
104	10020060	1"1/8 x 3/4"	25	1"3/32"	-	-	0.206
104	10020061	1"1/8 x 1/2"	25	29/32"	-	-	0.176
104	10020062	1"3/8 x 1"1/4	10	15/16"	-	-	0.317
104	10020063	1"3/8 x 1"1/2	10	1"45/64"	-	-	0.523
104	10020064	1"3/8 x 1"	10	1"1/4"	-	-	0.304
104	10020065	1"3/8 x 3/4"	10	1"	-	-	0.273
104	10020067	1"5/8 x 2"	5	1"25/32"	-	-	0.772
104	10020068	1"5/8 x 1"1/4	10	1"27/64"	-	-	0.386
104	10020066	1"5/8 x 1"1/2	10	7/8"	-	-	0.443
104	10020069	1"5/8 x 1"	10	1"15/32"	-	-	0.435
104	10020070	2"1/8 x 2"	5	31/32"	-	-	0.675
104	10020071	2"1/8 x 1"1/4	5	1"3/4"	-	-	0.631
104	10020072	2"5/8 x 2"1/2	4	1"7/32"	-	-	1.267
104	10020073	3"1/8 x 3"	2	1"25/32"	-	-	1.52

\* The indication of weight is approximate.

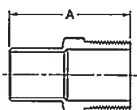
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## 104-2 Series - Male street adaptor FTG x M

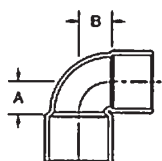


Male street adaptor  
FTG x M - NPT Thread

Figure Ref	Parker P/N	O. D. Size Inch x NPT Thread	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
104-2	10020075	3/8" x 1/4"	50	1"1/16	-	-	0.033
104-2	10020076	1/2" x 3/8"	50	1"3/16	-	-	0.049
104-2	10020077	5/8" x 1/2"	50	1"7/16	-	-	0.074
104-2	10020078	7/8" x 3/4"	25	1"27/32	-	-	0.143
104-2	10020079	1"1/8 X 1"	20	2"5/32	-	-	0.232
104-2	10020080	1"3/8 X 1"1/4	10	2"1/2	-	-	0.444
104-2	10020081	1"5/8 X 1"1/2	10	2"13/16	-	-	0.508
104-2	10020082	2"1/8 X 2"	5	2"13/16	-	-	0.749

\* The indication of weight is approximate.

## 107-C Series - 90 Elbow close ruff C x C

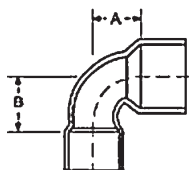


90 Elbow Close ruff  
C x C

Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
107-C	10020208	1/4"	50	1/4"	1/4"	-	0.008
107-C	10020209	3/8"	50	3/8"	3/8"	-	0.012
107-C	10020210	1/2"	50	21/64"	21/64"	-	0.026
107-C	10020211	5/8"	100	23/64"	23/64"	-	0.038
107-C	10020213	3/4"	25	17/32"	17/32"	-	0.069
107-C	10020215	7/8"	50	9/16"	9/16"	-	0.096
107-C	10020226	1"1/8	20	47/64"	47/64"	-	0.208
107-C	10020219	1"3/8	25	15/16"	15/16"	-	0.259
107-C	10020221	1"5/8	20	1"11/64	1"11/64	-	0.371
107-C	10020223	2"1/8	10	1"29/64	1"29/64	-	0.848
107-C	10020225	2"5/8	5	1"21/32	1"21/32	-	1.180
107-C	10020227	3"1/8	3	1"61/64	1"61/64	-	1.920
107-C	10020229	3"5/8	1	2"7/32	2"7/32	-	2.728
107-C	10020230	4"1/8	1	2"17/32	2"17/32	-	4.557

\* The indication of weight is approximate.

## 107-CR Series - 90 Elbow reducer close ruff C x C



90 Elbow reducer  
close ruff C x C

Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
107-CR	10020664	5/8" x 3/8"	50	11/16"	43/64"	-	0.034
107-CR	10020212	5/8" x 1/2"	50	43/64"	5/8"	-	0.042
107-CR	10020214	3/4" x 5/8"	25	31/32"	7/8"	-	0.077
107-CR	10020216	7/8" x 5/8"	50	5/8"	15/32"	-	0.085
107-CR	10020217	1"1/8 X 7/8"	25	3/4"	19/32"	-	0.146
107-CR	10020218	1"1/8 X 5/8"	25	1"1/8	7/8"	-	0.129
107-CR	10020220	1"3/8 X 1"1/8	10	7/8"	11/16"	-	0.229
107-CR	10020222	1"5/8 X 1"3/8	10	1"9/64	55/64"	-	0.338
107-CR	10020224	2"1/8 X 1"5/8	5	1"1/2	1"13/64	-	0.602
107-CR	10020226	2"5/8 X 2"1/8	5	1"1/2	1"7/8	-	1.128
107-CR	10020228	3"1/8 X 2"5/8	3	2"3/32	1"3/4	-	1.598

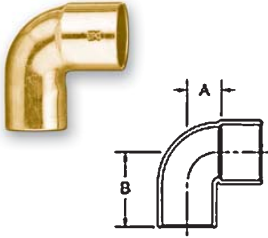
\* The indication of weight is approximate.

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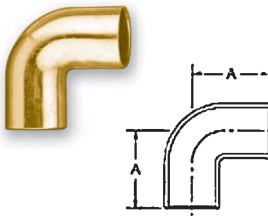
## 107-C-2 Series - 90 Elbow street close ruff FTG x C



90 Elbow street close ruff FTG x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
107-C-2	10020231	1/4"	50	1/4"	5/8"	-	0.006
107-C-2	10020232	3/8"	50	3/8"	3/4"	-	0.012
107-C-2	10020233	1/2"	50	21/64"	49/64"	-	0.027
107-C-2	10020234	5/8"	100	29/64"	1"1/32"	-	0.036
107-C-2	10020235	3/4"	25	17/32"	1"7/32"	-	0.061
107-C-2	10020236	7/8"	50	19/32"	1"13/32"	-	0.103
107-C-2	10020237	1"1/8"	20	21/32"	1"21/32"	-	0.193
107-C-2	10020238	1"3/8"	25	7/8"	1"29/32"	-	0.259
107-C-2	10020239	1"5/8"	20	1"11/64"	2"3/8"	-	0.392
107-C-2	10020240	2"1/8"	10	1"29/64"	2"27/32"	-	0.805
107-C-2	10020242	2"5/8"	5	1"3/4"	3"21/64"	-	1.187
107-C-2	10020243	3"1/8"	3	2"	3"25/32"	-	1.920
107-C-2	10020244	3"5/8"	1	2"15/64"	4"15/64"	-	2.798

\* The indication of weight is approximate.

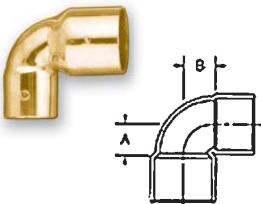
## 105-C Series - 90 Elbow street close ruff FTG x FTG



90 Elbow street close ruff FTG x FTG							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
105-C	10020245	3/8"	25	27/32"	-	-	0.013
105-C	10020246	1/2"	25	13/16"	-	-	0.029
105-C	10020247	5/8"	25	1"1/32"	-	-	0.043
105-C	10020628	7/8"	25	1"13/32"	-	-	0.086
105-C	10020630	1"1/8"	10	1"21/32"	-	-	0.166

\* The indication of weight is approximate.

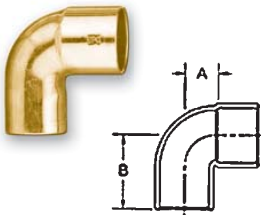
## 107-MT Series - 90 Elbow medium turn C x C



90 Elbow medium turn C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
107-MT	10020631	1/4"	50	3/8"	3/8"	-	0.010
107-MT	10020633	1/2"	50	1/2"	1/2"	-	0.043
107-MT	10020602	1"1/8"	10	47/64"	47/64"	-	0.252

\* The indication of weight is approximate.

## 107-MT-2 Series - 90 Elbow medium turn FTG x C



90 Elbow medium turn FTG x C							
Figure Ref	Parker P/N	O. D. Size inch	Box quantity	Dim. A	Dim. B	Dim. C	Weight kg *
107-MT-2	10020635	5/8"	50	19/32"	1"3/16"	-	0.066
107-MT-2	10020636	3/4"	25	7/8"	1"1/2"	-	0.104
107-MT-2	10020637	7/8"	25	13/16"	1"5/8"	-	0.146
107-MT-2	10020638	1"1/8"	10	1"1/16"	2"1/32"	-	0.271

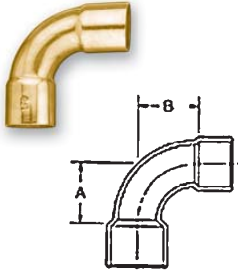
\* The indication of weight is approximate.

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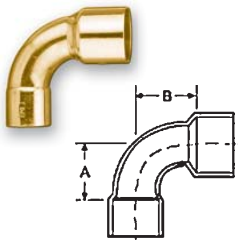
## 107-L Series - 90 Elbow long - Long turn C x C



90 Elbow long, Long turn C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
107-L	10020248	3/16"	50	5/16"	5/16"	-	0.007
107-L	10020249	1/4"	50	1/2"	1/2"	-	0.008
107-L	10020250	5/16"	50	9/16"	9/16"	-	0.013
107-L	10020251	3/8"	50	3/4"	3/4"	-	0.019
107-L	10020252	1/2"	50	3/4"	3/4"	-	0.033
107-L	10020254	5/8"	50	55/64"	55/64"	-	0.058
107-L	10020255	3/4"	25	1"1/8	1"1/8	-	0.088
107-L	10020257	7/8"	25	1"5/32	1"5/32	-	0.123
107-L	10020261	1"	10	1"15/32	1"15/32	-	0.231
107-L	10020262	1"1/8	10	1"29/64	1"29/64	-	0.270
107-L	10020263	1"3/8	10	1"7/8	1"7/8	-	0.381
107-L	10020264	1"5/8	10	2"3/16	2"3/16	-	0.563
107-L	10020265	2"1/8	5	3"	3"	-	1.156
107-L	10020266	2"5/8	1	3"3/16	3"3/16	-	1.999
107-L	10020267	3"1/8	1	4"5/8	4"5/8	-	3.320
107-L	10020640	3"5/8	1	5"1/4	5"1/4	-	4.850
107-L	10020641	4"1/8	1	5"7/8	5"7/8	-	7.400

\* The indication of weight is approximate.

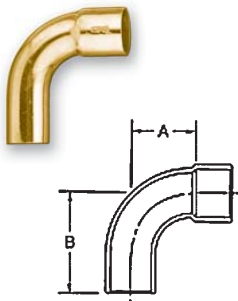
## 107-R Series - 90 Elbow reducer C x C



90 Elbow reducer C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
107-R	10020253	1/2" x 3/8"	50	39/64"	5/8"	-	0.027
107-R	10020639	5/8" x 1/2"	50	43/64"	5/8"	-	0.042
107-R	10020256	3/4" x 5/8"	25	7/8"	21/32"	-	0.077
107-R	10020258	7/8" x 3/4"	25	11/16"	15/32"	-	0.113
107-R	10020260	7/8" x 1/2"	50	27/32"	11/16"	-	0.073
107-R	10020259	7/8" x 5/8"	50	7/8"	7/8"	-	0.086
107-R	10020665	1"5/8 X 1"3/8	5	2"1/4	2"	-	0.483

\* The indication of weight is approximate.

## 107-L-2 - 90 Elbow street - Long turn FTG x C



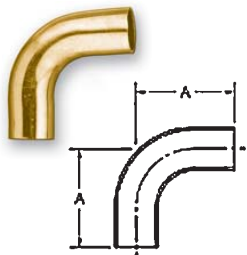
90 Elbow street Long turn FTG x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
107-L-2	10020268	1/4"	50	1/2"	7/8"	-	0.008
107-L-2	10020269	3/8"	50	23/64"	1"1/16	-	0.019
107-L-2	10020270	1/2"	50	23/32"	1"7/32	-	0.033
107-L-2	10020271	5/8"	50	55/64"	1"7/16	-	0.058
107-L-2	10020272	3/4"	25	1"1/16	1"27/32	-	0.088
107-L-2	10020273	7/8"	25	1"1/8	2"1/16	-	0.139
107-L-2	10020274	1"1/8	10	1"13/32	2"9/16	-	0.269
107-L-2	10020275	1"3/8	10	1"7/8	2"29/32	-	0.381
107-L-2	10020276	1"5/8	10	2"3/16	3"5/16	-	0.563
107-L-2	10020277	2"1/8	5	2"31/32	4"3/8	-	1.156
107-L-2	10020278	2"5/8	1	3"3/16	4"23/32	-	1.963
107-L-2	10020642	3"1/8	1	4"5/8	6"11/32	-	3.300
107-L-2	10020643	3"5/8	1	4"	5"31/32	-	3.850

\* The indication of weight is approximate.

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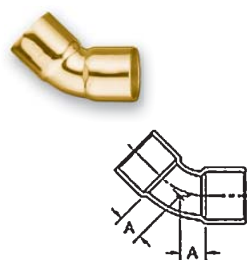
## 105-L Series - 90 Elbow street - Long turn FTG x FTG



90 Elbow street Long turn FTG x FTG							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
105-L	10020279	1/2"	25	1"3/16	-	-	0.033
105-L	10020280	5/8"	25	1"7/16	-	-	0.057
105-L	10020632	7/8"	25	2"	-	-	0.138
105-L	10020634	1"1/8	10	2"15/32	-	-	0.251
105-L	10020645	2"1/8	5	4"3/8	-	-	1.156

\* The indication of weight is approximate.

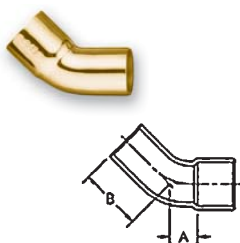
## 106 Series - 45 Elbow reducer C x C



45 Elbow reducer C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
106	10020182	1/4"	50	1/8"	-	-	0.006
106	10020183	3/8"	50	15/64"	-	-	0.013
106	10020184	1/2"	50	1/4"	-	-	0.024
106	10020185	5/8"	100	17/64"	-	-	0.034
106	10020186	3/4"	25	5/16"	-	-	0.056
106	10020187	7/8"	50	3/8"	-	-	0.076
106	10020188	1"1/8	25	13/32"	-	-	0.137
106	10020189	1"3/8	25	33/64"	-	-	0.229
106	10020190	1"5/8	20	19/32"	-	-	0.343
106	10020191	2"1/8	10	25/32"	-	-	0.625
106	10020192	2"5/8	5	7/8"	-	-	0.97
106	10020193	3"1/8	3	63/64"	-	-	1.46
106	10020194	3"5/8	1	1"5/32	-	-	2.18

\* The indication of weight is approximate.

## 106-2 Series - 45 Elbow street FTG x C



45 Elbow street FTG x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
106-2	10020196	3/8"	50	9/32"	41/64"	-	0.013
106-2	10020197	1/2"	50	9/32"	23/32"	-	0.024
106-2	10020198	5/8"	100	5/16"	25/32"	-	0.033
106-2	10020199	3/4"	25	5/16"	1"	-	0.056
106-2	10020200	7/8"	50	13/32"	1"3/16	-	0.076
106-2	10020201	1"1/8	25	7/16"	1"7/16	-	0.134
106-2	10020202	1"3/8	25	27/32"	1"9/16	-	0.229
106-2	10020203	1"5/8	20	19/32"	1"3/4	-	0.343
106-2	10020204	2"1/8	10	11/16"	2"3/32	-	0.625
106-2	10020205	2"5/8	5	29/32"	2"7/16	-	0.965
106-2	10020206	3"1/8	3	1"	2"11/16	-	1.47
106-2	10020207	3"5/8	1	1"5/32	3"	-	2.1

\* The indication of weight is approximate.

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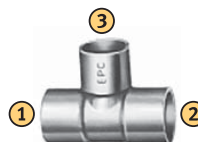
## Nomenclature

For tee fittings, the size indication should be understood as follow, see below:

The first inch indication gives you the O.D size of **Number 1** connection: ..... 1/4

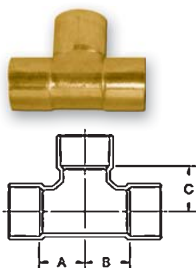
The second gives **Number 2** size: ..... 1/4

The third gives you the vertical connection **Number 3**: ..... 3/8



111	8932610	1/4" x 1/4" x 3/8"	50	13/32"	13/32"	1/4"	0.028
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## 111 Series - Tee C x C x C



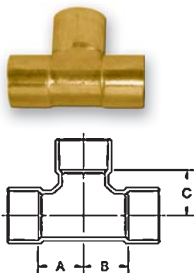
Tee C x C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
111	10020362	3/16"	50	3/16"	3/16"	3/16"	0.009
111	10020363	1/4"	50	13/64"	13/64"	7/32"	0.016
111	10020364	1/4" x 1/4" x 5/16"	50	17/64"	17/64"	9/32"	0.020
111	10020365	1/4" x 1/4" x 3/8"	50	13/32"	13/32"	1/4"	0.028
111	10020366	1/4" x 1/4" x 1/8"	50	5/16"	5/16"	7/32"	0.016
111	10020367	5/16"	50	7/32"	7/32"	9/32"	0.020
111	10020368	5/16" x 5/16" x 1/4"	50	7/32"	7/32"	11/32"	0.020
111	10020369	5/16" x 1/4" x 5/16"	50	7/32"	11/32"	9/32"	0.020
111	10020370	5/16" x 1/4" x 1/4"	50	7/32"	11/32"	11/32"	0.020
111	10020371	3/8"	50	17/64"	17/64"	1/4"	0.028
111	10020372	3/8" x 3/8" x 5/8"	50	21/32"	21/32"	11/32"	0.063
111	10020373	3/8" x 3/8" x 1/2"	50	15/32"	15/32"	3/8"	0.045
111	10020374	3/8" x 3/8" x 1/4"	50	17/64"	17/64"	13/32"	0.028
111	10020375	3/8" x 3/8" x 3/16"	50	17/64"	17/64"	7/16"	0.028
111	10020376	3/8" x 1/4" x 3/8"	50	17/64"	13/32"	1/4"	0.028
111	10020377	3/8" x 1/4" x 5/16"	50	17/64"	13/32"	11/32"	0.028
111	10020378	3/8" x 1/4" x 1/4"	50	17/64"	13/32"	13/32"	0.028
111	10020379	1/2"	50	5/16"	5/16"	3/8"	0.045
111	10020380	1/2" x 1/2" x 5/8"	50	17/32"	17/32"	11/32"	0.063
111	10020381	1/2" x 1/2" x 3/8"	50	5/16"	5/16"	15/32"	0.045
111	10020382	1/2" x 1/2" x 1/4"	50	5/16"	5/16"	15/31"	0.045
111	10020383	1/2" x 3/8" x 1/2"	50	5/16"	15/32"	3/8"	0.045
111	10020384	1/2" x 3/8" x 1/4"	50	5/16"	15/32"	5/8"	0.045
111	10020385	1/2" x 1/4" x 1/2"	50	5/16"	9/16"	3/8"	0.045
111	10020386	5/8"	50	21/64"	21/64"	11/32"	0.059
111	10020387	5/8" x 5/8" x 1" 1/8"	10	15/16"	15/16"	3/4"	0.290
111	10020388	5/8" x 5/8" x 7/8"	25	33/64"	33/64"	15/32"	0.118
111	10020389	5/8" x 5/8" x 3/4"	50	21/32"	21/32"	1/2"	0.110
111	10020390	5/8" x 5/8" x 1/2"	50	5/16"	5/16"	13/32"	0.064
111	10020391	5/8" x 5/8" x 3/8"	50	9/32"	9/32"	13/32"	0.064
111	10020392	5/8" x 5/8" x 1/4"	50	9/32"	9/32"	1/2"	0.064

\* The indication of weight is approximate.

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## 111 Series - Tee C x C x C



Tee C x C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
111	10020393	5/8" x 1/2" x 5/8"	50	3/8"	17/32"	11/32"	0.063
111	10020394	5/8" x 1/2" x 1/2"	50	5/16"	1/2"	13/32"	0.064
111	10020395	5/8" x 3/8" x 3/8"	50	9/32"	5/8"	13/32"	0.064
111	10020396	3/4"	25	7/16"	7/16"	1/2"	0.110
111	10020397	3/4" x 3/4" x 7/8"	25	11/16"	11/16"	17/32"	0.170
111	10020398	3/4" x 3/4" x 5/8"	25	27/64"	27/64"	1/2"	0.107
111	10020399	3/4" x 3/4" x 1/2"	25	27/64"	27/64"	21/32"	0.107
111	10020400	3/4" x 3/4" x 3/8"	25	27/64"	27/64"	23/32"	0.107
111	10020401	3/4" x 5/8" x 5/8"	25	27/64"	5/8"	1/2"	0.107
111	10020402	7/8"	25	1/2"	1/2"	17/32"	0.144
111	10020403	7/8" x 7/8" x 1 1/8"	10	3/4"	3/4"	17/32"	0.202
111	10020404	7/8" x 7/8" x 3/4"	25	1/2"	1/2"	3/4"	0.153
111	10020405	7/8" x 7/8" x 5/8"	25	25/64"	25/64"	19/32"	0.112
111	10020406	7/8" x 7/8" x 1/2"	25	25/64"	25/64"	11/16"	0.131
111	10020407	7/8" x 7/8" x 3/8"	25	25/64"	25/64"	3/4"	0.135
111	10020408	7/8" x 3/4" x 3/4"	25	1/2"	11/16"	3/4"	0.150
111	10020409	7/8" x 5/8" x 7/8"	25	1/2"	25/32"	17/32"	0.144
111	10020410	7/8" x 5/8" x 5/8"	25	25/64"	5/8"	19/32"	0.109
111	10020412	7/8" x 5/8" x 1/2"	25	25/64"	5/8"	11/16"	0.137
111	10020413	7/8" x 5/8" x 3/8"	25	25/64"	5/8"	3/4"	0.140
111	10020414	7/8" x 1/2" x 7/8"	25	1/2"	29/32"	17/32"	0.159
111	10020415	7/8" x 1/2" x 1/2"	25	25/64"	23/32"	11/16"	0.132
111	10020416	1 1/8"	10	41/64"	41/64"	19/32"	0.293
111	10020417	1 1/8" x 1 1/8" x 1 3/8"	5	1 5/32"	1 5/32"	31/32"	0.405
111	10020418	1 1/8" x 1 1/8" x 7/8"	10	1/2"	1/2"	5/8"	0.220
111	10020419	1 1/8" x 1 1/8" x 3/4"	10	1/2"	1/2"	15/16"	0.319
111	10020420	1 1/8" x 1 1/8" x 5/8"	10	23/64"	23/64"	11/16"	0.183
111	10020421	1 1/8" x 1 1/8" x 1/2"	10	23/64"	23/64"	13/16"	0.183
111	10020422	1 1/8" x 7/8" x 1 1/8"	10	21/32"	53/64"	21/32"	0.290
111	10020423	1 1/8" x 7/8" x 7/8"	10	1/2"	11/16"	5/8"	0.220
111	10020424	1 1/8" x 7/8" x 5/8"	10	23/64"	9/16"	11/16"	0.183
111	10020425	1 1/8" x 7/8" x 1/2"	10	23/64"	9/16"	13/16"	0.270
111	10020426	1 1/8" x 5/8" x 1 1/8"	10	21/32"	1 5/64"	21/32"	0.290
111	10020427	1 1/8" x 5/8" x 7/8"	10	1/2"	15/16"	5/8"	0.220
111	10020428	1 1/8" x 5/8" x 5/8"	10	23/64"	13/16"	11/16"	0.183
111	10020429	1 3/8"	5	41/64"	41/64"	41/64"	0.397
111	10020430	1 3/8" x 1 3/8" x 2 1/8"	5	1 3/4"	1 3/4"	1 3/8"	1.352
111	10020431	1 3/8" x 1 3/8" x 1 5/8"	5	1 3/16"	1 3/16"	1 5/32"	0.680
111	10020432	1 3/8" x 1 3/8" x 1 1/8"	5	17/32"	17/32"	25/32"	0.348
111	10020433	1 3/8" x 1 3/8" x 7/8"	5	7/16"	7/16"	3/4"	0.314
111	10020434	1 3/8" x 1 3/8" x 5/8"	5	19/64"	19/64"	11/64"	0.259
111	10020435	1 3/8" x 1 1/8" x 1 3/8"	5	7/8"	7/8"	25/32"	0.405
111	10020436	1 3/8" x 1 1/8" x 1 1/8"	5	3/4"	3/4"	25/32"	0.391
111	10020437	1 3/8" x 1 1/8" x 7/8"	5	5/8"	5/8"	25/32"	0.297
111	10020438	1 3/8" x 1 1/8" x 5/8"	5	1/2"	1/2"	25/32"	0.267

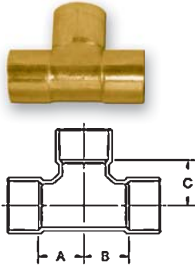
\* The indication of weight is approximate.

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## 111 Series - Tee C x C x C



Tee C x C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
111	10020439	1"3/8 x 7/8" x 1"3/8	5	7/8"	7/8"	25/32"	0.405
111	10020440	1"3/8 x 7/8" x 1"1/8	5	3/4"	3/4"	25/32"	0.391
111	10020441	1"3/8 x 7/8" x 7/8"	5	5/8"	5/8"	25/32"	0.297
111	10020442	1"3/8 x 7/8" x 5/8"	5	1/2"	1/2"	25/32"	0.267
111	10020443	1"3/8 x 5/8" x 1"3/8	5	7/8"	7/8"	25/32"	0.405
111	10020444	1"5/8	5	13/16"	13/16"	13/16"	0.544
111	10020445	1"5/8 x 1"5/8 x 2"1/8	5	1"37/64	1"37/64	1"3/8	1.352
111	10020446	1"5/8 x 1"5/8 x 1"3/8	5	1"1/16	1"1/16	13/16"	0.457
111	10020447	1"5/8 x 1"5/8 x 1"1/8	5	9/16"	9/16"	13/16"	0.376
111	10020448	1"5/8 x 1"5/8 x 7/8"	5	11/16"	11/16"	31/32"	0.332
111	10020449	1"5/8 x 1"5/8 x 5/8"	5	9/16"	9/16"	31/32"	0.296
111	10020450	1"5/8 x 1"3/8 x 1"5/8	5	1"7/32	1"3/16	1"7/32	0.680
111	10020451	1"5/8 x 1"3/8 x 1"3/8	5	31/32"	1"3/16	1"1/16	0.661
111	10020452	1"5/8 x 1"3/8 x 1"1/8	5	27/32"	1"3/16	1"1/16	0.591
111	10020453	1"5/8 x 1"3/8 x 7/8"	5	11/16"	7/8"	31/32"	0.583
111	10020454	1"5/8 x 1"3/8 x 5/8"	5	9/16"	13/16"	31/32"	0.460
111	10020455	1"5/8 x 1"1/8 x 1"5/8	5	1"5/32	1"1/4	1"5/32	0.680
111	10020456	1"5/8 x 1"1/8 x 1"3/8	5	31/32"	1"5/16	1"1/16	0.661
111	10020457	1"5/8 x 1"1/8 x 1"1/8	5	27/32"	1"1/8	1"1/16	0.591
111	10020458	1"5/8 x 1"1/8 x 7/8"	5	11/16"	1"31/32	31/32"	0.583
111	10020459	1"5/8 x 1"1/8 x 5/8"	5	9/16"	13/16"	31/32"	0.460
111	10020460	1"5/8 x 7/8" x 1"5/8	5	1"5/32	1"19/64	1"5/32	0.680
111	10020461	1"5/8 x 7/8" x 1"3/8	5	31/32"	1"1/4	1"1/16	0.661
111	10020462	1"5/8 x 7/8" x 1"1/8	5	27/32"	1"5/16	1"1/16	0.591
111	10020463	1"5/8 x 7/8" x 7/8"	5	11/32"	1"1/32	31/32"	0.583
111	10020464	1"5/8 x 7/8" x 5/8"	5	9/16"	15/16"	31/32"	0.460
111	10020465	1"5/8 x 5/8" x 1"5/8	5	1"5/32	1"31/64	1"5/32	0.680
111	10020466	2"1/8	5	1"1/16	1"1/16	1"15/64	1.082
111	10020467	2"1/8 x 2"1/8 x 2"5/8	1	2"	2"	1"11/16	1.961
111	10020468	2"1/8 x 2"1/8 x 1"5/8	5	3/4"	3/4"	1"3/32	0.893
111	10020469	2"1/8 x 2"1/8 x 1"3/8	5	11/16"	11/16"	1"1/8	0.742
111	10020470	2"1/8 x 2"1/8 x 1"1/8	5	1/2"	1/2"	1"3/32	0.673
111	10020471	2"1/8 x 2"1/8 x 7/8"	5	7/16"	7/16"	1"5/32	0.624
111	10020472	2"1/8 x 2"1/8 x 5/8"	5	5/16"	5/16"	1"1/8	0.551
111	10020473	2"1/8 x 1"5/8 x 2"1/8	5	1"3/8	1"37/64	1"3/8	1.352
111	10020474	2"1/8 x 1"5/8 x 1"5/8	5	1"1/32	1"19/64	1"11/32	1.097
111	10020475	2"1/8 x 1"5/8 x 1"3/8	5	31/32"	1"3/16	1"3/8	1.013
111	10020476	2"1/8 x 1"5/8 x 1"1/8	5	13/16"	1"1/16	1"5/16	1.023
111	10020477	2"1/8 x 1"5/8 x 7/8"	5	11/16"	1"1/16	1"1/4	0.960
111	10020478	2"1/8 x 1"5/8 x 5/8"	5	5/8"	15/16"	1"1/4	0.850
111	10020479	2"1/8 x 1"3/8 x 2"1/8	5	1"3/8	1"25/32	1"3/8	1.352
111	10020480	2"1/8 x 1"3/8 x 1"5/8	5	1"1/32	1"3/8	1"11/32	1.097
111	10020481	2"1/8 x 1"3/8 x 1"3/8	5	1"	1"3/16	1"3/8	1.013
111	10020482	2"1/8 x 1"3/8 x 1"1/8	5	13/16"	1"9/32	1"5/16	1.023
111	10020483	2"1/8 x 1"3/8 x 7/8"	5	11/16"	1"5/32	1"1/4	0.960
111	10020484	2"1/8 x 1"3/8 x 5/8"	5	5/8"	1"5/64	1"1/4	0.850

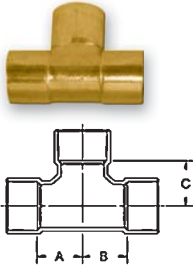
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## 111 Series - Tee C x C x C



Tee C x C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
111	10020485	2"1/8 x 1"1/8 x 2"1/8	5	1"3/8	1"25/32	1"3/8	1.352
111	10020486	2"1/8 x 1"1/8 x 1"1/8	5	27/32"	1"9/32	1"11/32	1.023
111	10020487	2"1/8 x 7/8" x 2"1/8	5	1"3/8	1"3/4	1"3/8	1.352
111	10020489	2"1/8 x 5/8" x 2"1/8	5	1"3/8	1"7/8	1"3/8	1.352
111	10020490	2"5/8	1	1"21/32	1"21/32	1"11/16	1.710
111	10020491	2"5/8 x 2"5/8 x 3"1/8	1	2"5/8	2"5/8	1"7/8	2.744
111	10020492	2"5/8 x 2"5/8 x 2"1/8	1	1"7/16	1"7/16	1"11/16	1.673
111	10020493	2"5/8 x 2"5/8 x 1"5/8	1	1"3/16	1"3/16	1"19/32	1.460
111	10020494	2"5/8 x 2"5/8 x 7/8"	1	3/4"	3/4"	1"31/64	1.258
111	10020495	2"5/8 x 2"5/8 x 5/8"	1	1/2"	1/2"	1"1/2	1.081
111	10020496	2"5/8 x 2"1/8 x 2"5/8	1	1"21/32	2"	1"5/16	1.961
111	10020497	2"5/8 x 2"1/8 x 2"1/8	1	1"7/16	2 3/64"	1"11/16	1.673
111	10020498	2"5/8 x 2"1/8 x 1"5/8	1	1"3/16	1"3/4	1"19/32	1.460
111	10020499	2"5/8 x 2"1/8 x 1"3/8	1	1"	1"11/16	1"39/64	1.341
111	10020550	2"5/8 x 2"1/8 x 1"1/8	1	7/8"	1"9/16	1"5/8	1.356
111	10020551	2"5/8 x 2"1/8 x 7/8"	1	3/4"	1"3/8	1"31/64	1.258
111	10020552	2"5/8 x 2"1/8 x 5/8"	1	1/2"	1"11/32	1"1/2	1.081
111	10020553	2"5/8 x 1"5/8 x 2"5/8	1	1"21/32	2"21/32	1"11/16	1.961
111	10020554	2"5/8 x 1"5/8 x 2"1/8	1	1"7/16	2"15/32	1"11/16	1.673
111	10020555	2"5/8 x 1"5/8 x 1"5/8	1	1"3/16	2"19/64	1"19/32	1.460
111	10020556	2"5/8 x 1"5/8 x 1"3/8	1	1"	2"3/16	1"39/64	1.341
111	10020557	2"5/8 x 1"3/8 x 2"5/8	1	1"21/32	2"31/32	1"11/16	1.961
111	10020558	2"5/8 x 1"3/8 x 2"1/8	1	1"7/16	2"45/64	1"11/16	1.673
111	10020559	2"5/8 x 1"1/8 x 2"5/8	1	1"21/32	3"7/32	1"11/16	1.961
111	10020560	2"5/8 x 7/8" x 2"5/8	1	1"21/32	3"7/16	1"11/16	1.961
111	10020561	3"1/8	1	1"7/8	1"7/8	1"11/16	2.632
111	10020562	3"1/8 x 3"1/8 x 4 1/8	1	3"21/32	3"21/32	2"9/16	6.396
111	10020563	3"1/8 x 3"1/8 x 2"5/8	1	1"11/16	1"11/16	1"31/32	2.351
111	10020564	3"1/8 x 3"1/8 x 2"1/8	1	1"7/16	1"7/16	1"31/32	2.270
111	10020565	3"1/8 x 3"1/8 x 1"5/8	1	1"3/16	1"3/16	1"29/32	2.024
111	10020566	3"1/8 x 3"1/8 x 1"3/8	1	31/32"	31/32"	1"59/64	1.939
111	10020567	3"1/8 x 3"1/8 x 1"1/8	1	7/8"	7/8"	1"59/64	1.757
111	10020568	3"1/8 x 3"1/8 x 7/8"	1	3/4"	3/4"	1"13/16	1.691
111	10020569	3"1/8 x 3"1/8 x 5/8"	1	9/16"	9/16"	1"11/16	1.542
111	10020570	3"1/8 x 2"5/8 x 3"1/8	1	1"7/8	2"5/8	1"7/8	2.744
111	10020571	3"1/8 x 2"5/8 x 2"5/8	1	1"11/16	2"13/32	1"31/32	2.351
111	10020572	3"1/8 x 2"5/8 x 2"1/8	1	1"7/16	2"1/8	1"31/32	2.270
111	10020573	3"1/8 x 2"5/8 x 1"5/8	1	1"3/16	1"7/8	1"29/32	2.024
111	10020574	3"1/8 x 2"5/8 x 1"3/8	1	31/32"	1 3/4	1"59/64	1.939
111	10020576	3"1/8 x 2"5/8 x 1"1/8	1	7/8"	1"5/8	1"59/64	1.757
111	10020577	3"1/8 x 2"5/8 x 7/8"	1	3/4"	1 17/32	1"13/16	1.691
111	10020578	3"1/8 x 2"1/8 x 3"1/8	1	1"7/8	3 1/16	1"7/8	2.744
111	10020579	3"1/8 x 2"1/8 x 2"5/8	1	1"11/16	2"23/32	1"31/32	2.351
111	10020580	3"1/8 x 2"1/8 x 2"1/8	1	1"7/16	2"9/16	1"31/32	2.270
111	10020581	3"1/8 x 2"1/8 x 1"5/8	1	1"3/16	2"5/16	1"29/32	2.024
111	10020582	3"1/8 x 2"1/8 x 1"3/8	1	31/32"	2"3/16	1"59/64	1.939

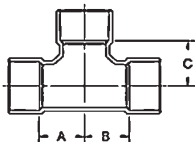
\* The indication of weight is approximate.

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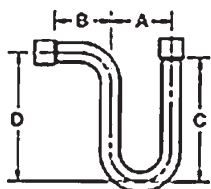
## 111 Series - Tee C x C x C



Tee C x C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
111	10020583	3"1/8 x 2"1/8 x 1"1/8	1	7/8"	2"	1"59/64	1.757
111	10020584	3"1/8 x 1"5/8 x 3"1/8	1	1"7/8	3"9/16	1"7/8	2.744
111	10020585	3"1/8 x 1"5/8 x 2"5/8	1	1"11/16	3"5/16	1"31/32	2.351
111	10020586	3"1/8 x 1"5/8 x 2"1/8	1	1"7/16	3"1/8	1"31/32	2.270
111	10020587	3"1/8 x 1"5/8 x 1"5/8	1	1"3/16	2"25/32	1"29/32	2.024
111	10020588	3"5/8	1	2"5/32	2"5/32	2"1/4	4.167
111	10020589	4"1/8	1	2"13/32	2"13/32	2"9/16	5.210
111	10020590	5"1/8	1	2"37/64	2"37/64	2"29/32	7.998
111	10020591	6"1/8	1	3"1/8	3"1/8	3"11/16	12.613
111	10020593	1/4" x 1/4" x 1/4"	50	13/64"	13/64"	7/32"	0.016
111	10020654	1/2" x 3/8" x 3/8"	50	5/16"	15/32"	15/32"	0.045
111	10020656	2"5/8 x 2"5/8 x 1"3/8	1	1"	1"	1"39/64	1.341
111	10020657	2"5/8 x 2"5/8 x 1"1/8	1	7/8"	7/8"	1"5/8	1.356
111	10020658	3"1/8 x 1"3/8 x 3"1/8	1	1"7/8	3"23/32	1"7/8	2.744
111	10020659	3"1/8 x 1"1/8 x 3"1/8	1	1"7/8	3"29/32	1"7/8	2.744
111	10020660	3"1/8 x 7/8" x 3"1/8	1	1"7/8	4"1/32	1"7/8	2.744
111	10020661	4 1/8 x 4 1/8 x 3"1/8	1	2"1/32	2"1/32	2"1/2	5.714
111	10020662	4 1/8 x 4 1/8 x 2"5/8	1	1"25/32	1"25/32	2"19/32	5.361
111	10020655	1"1/8 x 1"1/8 x 1"5/8	5	1"1/4	1"1/4	1"5/32	0.680

\* The indication of weight is approximate.

## 123 Series - U Trap C x C



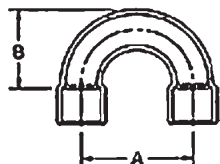
U Trap C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
123	10020281	5/8"	5	2"1/4	2"3/16	2"5/32	0.213
123	10020282	3/4"	10	3"	2"7/8	5"9/32	0.465
123	10020283	7/8"	10	3"1/2	2"3/4	5"7/32	0.541
123	10020284	1"1/8	10	3"17/32	2"11/32	5"1/8	0.902
123	10020285	1"3/8	5	5"	3"1/2	5"1/4	1.439
123	10020286	1"5/8	5	5"	3"1/2	7"3/4	2.491
123	10020646	2"1/8	3	6"	4"1/8	8"5/8	4.468

\* The indication of weight is approximate.

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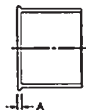
## 138 Series - Return bend C x C



Return bend C x C							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
138	10020345	3/8" x 1"1/2	50	1"1/2	15/16"	-	0.031
138	10020346	3/8" x 1"1/4	50	1"1/4	13/16"	-	0.028
138	10020347	1/2" x 2"	25	2"	1"1/4	-	0.069
138	10020348	1/2" x 1"1/2	25	1"1/2	1"	-	0.054
138	10020349	5/8" x 3"	25	3"	1"13/16	-	0.128
138	10020350	5/8" x 2"1/2	25	2"1/2	1"9/16	-	0.113
138	10020351	5/8" x 2"1/4	25	2"1/4	1"7/16	-	0.102
138	10020647	5/8" x 1"9/16	25	1"9/16	1" 3/32	-	0.078
138	10020648	3/4" x 2"1/8	10	2"1/8	1"7/16	-	0.129
138	10020649	7/8" x 2"1/2	10	2"1/2	1"11/16	-	0.194
138	10020650	1"1/8 x 3"1/4	5	3"1/4	2"3/16	-	0.412
138	10020651	1"1/8 x 3"	5	3"	2"1/16	-	0.383
138	10020652	2"1/8 x 5"1/2	4	5"1/2	3"13/16	-	1.802

\* The indication of weight is approximate.

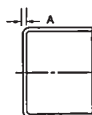
## 116 Series - Fitting end plug



Fitting end plug							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
116	10020287	1/2"	50	1/16"	-	-	0.010
116	10020288	5/8"	100	3/32"	-	-	0.016
116	10020289	7/8"	50	1/8"	-	-	0.036
116	10020290	1"1/8	25	5/32"	-	-	0.059

\* The indication of weight is approximate.

## 117 Series - Tube cap



Tube cap							
Figure Ref	Parker P/N	O. D. Size inch	Box Quantity	Dim. A	Dim. B	Dim. C	Weight kg *
117	10020095	1/4"	50	1/32"	-	-	0.003
117	10020096	3/8"	50	1/16"	-	-	0.005
117	10020097	1/2"	50	3/32"	-	-	0.010
117	10020098	5/8"	100	5/64"	-	-	0.016
117	10020099	3/4"	25	1/8"	-	-	0.030
117	10020100	7/8"	50	5/64"	-	-	0.036
117	10020101	1"1/8	50	1/8"	-	-	0.059
117	10020102	1"3/8	25	5/32"	-	-	0.108
117	10020103	1"5/8	20	5/32"	-	-	0.159
117	10020104	2"1/8	10	5/32"	-	-	0.284
117	10020105	2"5/8	5	5/32"	-	-	0.469
117	10020106	3"1/8	5	3/16"	-	-	0.713
117	10020107	3"5/8	1	3/16"	-	-	0.970
117	10020108	4"1/8	1	7/32"	-	-	1.384

\* The indication of weight is approximate.

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## Product Certification

- MSS SP104 wrought copper LW solder joint pressure fittings.
- ANSI B16.18-1984 Cast copper alloy solder joint pressure Fittings.
- ANSI B16.15-1978 Cast bronze threaded fittings.
- ANSI B16.26-1983 Cast copper alloy fittings for flared copper tube.
- ANSI B16.24-1979, MSS SP106 Bronze pipe flanges and flanges fittings.

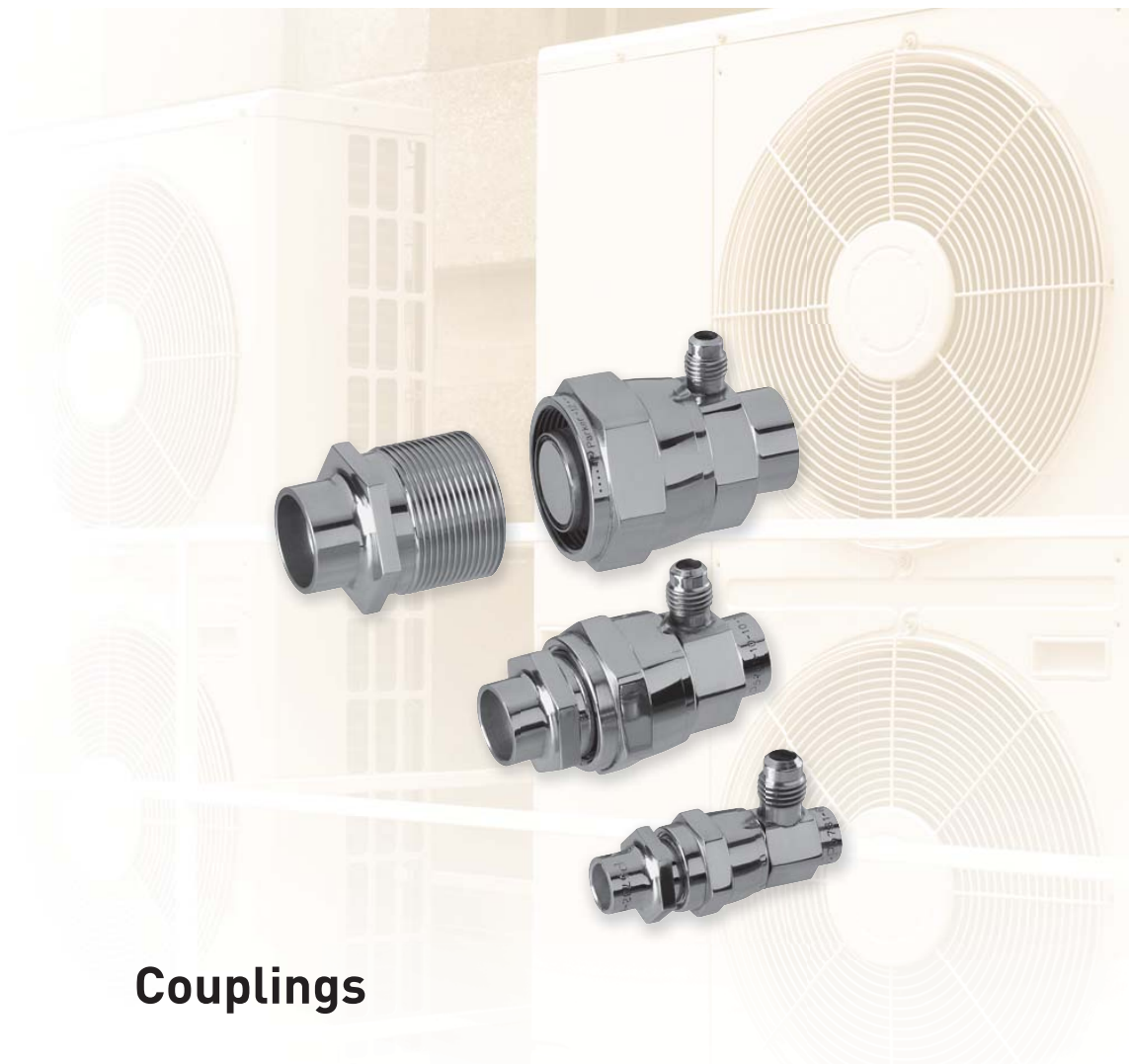
**Parker wrought copper solder joint fittings are manufactured to comply with the material, performance and installation /join dimensions of ANSI B16.22.**

**The materials used to manufacture these fittings are also in compliance with the follow specifications.**

- **Tubular wrought copper:** ASTM B75 Alloy C12200
- **Products made from Sheet:** ASTM B152 Alloy C11000
- **Cast products:** ASTM B584 Alloy C84400

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## Couplings

Self Sealing Couplings Zinc Plated Steel Body

15



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## Couplings

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# Self-Sealing Couplings 5400 Series

## Zinc-plated steel body

Parker's 5400 self-sealing steel couplings are used in fluid-transfer applications for easy maintenance on refrigeration and air conditioning systems. The couplings also allow for pre-charging of units for easy installation.



Applications can include marine refrigeration and air conditioning systems, along with cryogenic units.

### Benefits

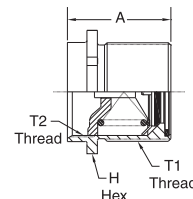
- **Standard Material:**  
Final seal and seal ⇒ Neoprene™  
Body ⇒ Zinc-plated steel  
Adaptor ⇒ Zinc-plated steel or brass
- **Temperature Rating:** -40°C to 121°C (-40°F to +250°F)
- **Approvals:** U.L. listed; File No: SA7511 RoHS Compliant

Dash Size	Part Description	Operating Pressure bar	Burst Pressure bar	Air Inclusion Connect cm <sup>3</sup>	Maximum Fluid Loss Disconnect cm <sup>3</sup>	Static Connect bar	Coupled g./yr	Uncoupled Without Cap/Plug g./yr	Uncoupled With Cap/Plug g./yr	Vacuum mm. Hg.	Rated Flow lpm
-4	Male half	179.5	517.2	0.1	0.05	10.3	7.1	14.2	7.1	-	-
-4	Female half	34.5	103.4	0.1	0.05	10.3	7.1	14.2	7.1	-	-
-4	Whole coupling	206.9	620.7	0.1	0.05	10.3	7.1	14.2	7.1	711	52.9
-8	Male half	120.7	358.6	0.1	0.1	10.3	7.1	14.2	7.1	-	-
-8	Female half	51.7	155.2	0.1	0.1	10.3	7.1	14.2	7.1	-	-
-8	Whole coupling	120.7	358.6	0.1	0.1	10.3	7.1	14.2	7.1	711	52.9
-12	Male half	55.2	144.8	0.3	0.1	10.3	7.1	14.2	7.1	-	-
-12	Female half	51.7	155.2	0.3	0.1	10.3	7.1	14.2	7.1	-	-
-12	Whole coupling	48.3	144.8	0.3	0.1	10.3	7.1	14.2	7.1	711	132.4
-16	Male half	48.3	144.8	0.5	0.2	10.3	7.1	14.2	7.1	-	-
-16	Female half	20.7	62.1	0.5	0.2	10.3	7.1	14.2	7.1	-	-
-16	Whole coupling	48.3	144.8	0.5	0.2	10.3	7.1	14.2	7.1	711	283.8

### 5400-S2 Male Half

No Adaptor

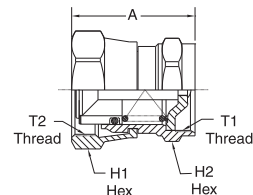
Part Number	Coupling Size	T1 Thread	A		H1 Hex		T2 Thread
			Inches	mm	Inches	mm	
5400-S2-4	-4	5/8 - 18UNF	1.08	27.4	0.75	19.0	1/2 - 20
5400-S2-8	-8	1 - 20UNEF	1.37	34.8	1.13	28.7	7/8 - 20
5400-S2-12	-12	1-7/16 - 16UN	1.74	44.2	1.63	41.4	1-1/4 - 18
5400-S2-16	-16	1-3/4 - 16UN	1.83	46.4	1.88	47.7	1-19/32 - 20NS



### 5400-S5 Female Half

No Adaptor

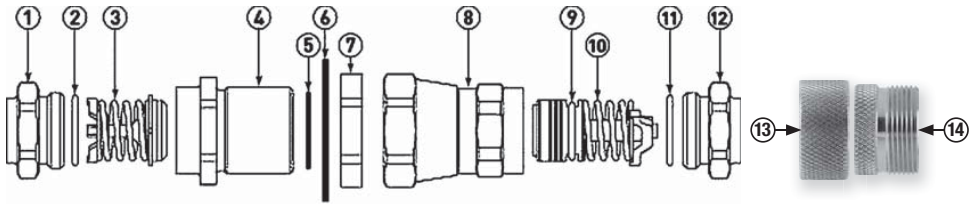
Part Number	Coupling Size	T1 Thread	A		H1 Hex		H2 Hex		T2 Thread
			Inches	mm	Inches	mm	Inches	mm	
5400-S5-4	-4	5/8 - 18UNF	1.13	28.7	0.75	19.0	0.63	16.	1/2 - 20
5400-S5-8	-8	1 - 20UNEF	1.63	41.4	1.19	30.2	1.0	25.4	7/8 - 20
5400-S5-12	-12	1-7/16 - 16UN	2.15	54.6	1.63	41.4	1.38	35.	1-1/4 - 18
5400-S5-16	-16	1-3/4 - 16UN	2.37	60.2	2.0	50.8	1.75	44.4	1-19/32 - 20NS



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## Components



Item Number	Description	Dash Size			
		-4	-8	-12	
		Tube O.D. Size - Inches			
		1/4" - 3/8"	1/4" - 5/8"	5/8" - 7/8"	7/8" - 1-3/8"

### Typical Male Half

Item Number	Description	202208-*-4B	202208-*-8B	202208-*-12B	202208-*-16B
1	Tubing Adaptor (Brass)	202208-*-4B	202208-*-8B	202208-*-12B	202208-*-16B
2	O-Ring	22546-12	22546-17	22546-23	22546-28
3	Poppet Valve Assembly	5400-S20-4	5400-S20-8	5400-S20-12	5400-S20-16
4	Body	5400-17-4S	5400-17-8-S	5400-17-12S	5400-17-16S
5	Gasket Seal	22008-4S	22008-8S	22008-12S	22008-16S
6	Lock Washer	5400-54-4S	5400-54-8S	5400-54-12S	5400-54-16S
7	Jam Nut	5400-53-4S	5400-53-8S	5400-53-12S	5400-53-16S

### Typical Female Half

Item Number	Description	5400-S16-4	5400-S16-8	5400-S16-12	5400-S16-16
8	Union Nut and Body Assembly	5400-S16-4	5400-S16-8	5400-S16-12	5400-S16-16
9	O-Ring	22546-10	22546-112	22546-116	22546-214
10	Valve and Sleeve Assembly	5400-S19-4	5400-S19-8	5400-S19-12	5400-S19-16
11	O-Ring	22546-12	22546-17	22546-23	22546-28
12	Tubing Adaptor (Brass)	202208-*-4B	202208-*-8B	202208-*-12B	202208-*-16B
13	Dust cap (S2 half)	5400-S6-4	5400-S6-8	5400-S6-12	5400-S6-16
14	Dust plug (S5 half)	5400-S8-4	5400-S8-8	5400-S8-12	5400-S8-16

## Adaptor SAE 37° (JIC)

Flare Connection

Coupling Size	O-Ring	Part Numbers		Thread Size	Tube O.D. Size Inches
		Brass	Steel		
-4	22546-12	202220-4-4B	202220-4-4S	7/16 - 20	1/4
-4	22546-12	202220-6-4B	202220-6-4S	9/16 - 18	3/8
-8	22546-17	202220-6-8B	202220-6-8S	9/16 - 18	3/8
-8	22546-17	202220-8-8B	202220-8-8S	3/4 - 16	1/2
-12	22546-23	202220-10-12B	202220-10-12S	7/8 - 14	5/8
-12	22546-23	202220-12-12B	202220-12-12S	1-1/16 - 12	3/4
-16	22546-28	202220-16-16B	202220-16-16S	1-3/16 - 12	1

## Adaptor - Braze

Coupling Size	Part Numbers		Thread Size	Tube O.D. Size Inches
	O-Ring	Brass		
-4	22546-12	202208-4-4B	1/2-20	1/4
-8	22546-17	202208-8-8B	7/8-20	3/8
-12	22546-23	202208-10-12B	1-1/4 - 18	5/8
-16	22546-28	202208-14-16B	1-9/32 - 20	7/8

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## Brass Steel Body 5500 Series

Parker's 5500 self-sealing brass couplings allow for pre-charging of AC and heat pump systems.

The couplings provide for easy maintenance and installation on refrigeration and air conditioning systems.

Applications can also include marine refrigeration and air conditioning systems, split refrigeration, and portable cooling solutions.



### Benefits

- **Standard Material:**
  - Final seal and seal ⇒ Neoprene™
  - Body ⇒ Brass Bar per ASTM-B16, Alloy C3600
  - Connections ⇒ Refrigeration Grade Copper, per ASTM-B75, Alloy C12200
- **Temperature Rating:** -40°C to 121°C (-40°F to +250°F)
- **Approvals:** U.L. listed; File No: SA7511  
RoHS Compliant

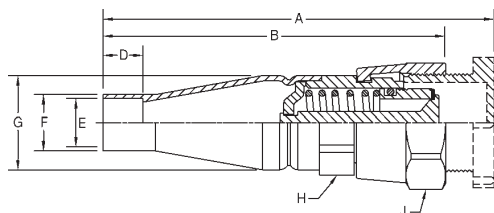
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Copper Connection Inch	mm	Coupling Body Inch	mm	Part Number		Dimensions - Inches mm							Weight Ounces g	
				Less Plug	With Plug**	Coupling Length		Connection			Coupling Body			Retain- ing Nut Hex + J
						With Plug A	B	Depth D	I.D. E	O.D. F	O.D. G	Hex + H		
Dash Size*	Dash Size*													
1/4 ODS		3/8		N/A	5505-04B-06	3.1	2.7	0.3	0.3	0.3	0.7	0.8	0.9	2.5
(-04)	6.4 ODS	(-06)	9.5			79.8	69.1	8.1	6.4	8.6	18.0	19.1	23.9	71.7
3/8 ODS		3/8		N/A	5505-06B-06	3.1	2.7	0.3	0.4	0.5	0.7	0.8	0.9	2.5
(-06)	9.5 ODS	(-06)	9.5			79.8	69.1	8.1	9.7	11.7	18.0	19.1	23.9	71.7
1/4 ODS		1/2		N/A	5505-04B-08	3.9	3.7	0.3	0.3	0.4	0.9	1.0	1.2	4.9
(-04)	6.4 ODS	(-08)	12.7			98.6	93.7	7.9	6.4	9.7	23.4	25.4	30.2	137.5
1/4 ODS		1/2		N/A	5505-04S-08	4.0	3.7	0.3	0.3	0.4	0.9	1.0	1.2	4.9
(-04)	6.4 ODS	(-08)	12.7			102.9	93.7	7.9	6.4	9.7	23.4	25.4	30.2	137.5
3/8 ODS		1/2		N/A	5505-06B-08	3.9	3.7	0.3	0.4	0.5	0.9	1.0	1.2	4.9
(-06)	9.5 ODS	(-08)	12.7			97.8	93.0	7.9	9.7	12.0	23.4	25.4	30.2	137.5
3/8 ODS		1/2		N/A	5505-06S-08	4.0	3.7	0.3	0.4	0.5	0.9	1.0	1.2	4.9
(-06)	9.5 ODS	(-08)	12.7			101.9	93.0	7.9	9.7	12.0	23.4	25.4	30.2	137.5
12 ODS		1/2		N/A	5505-08B-08	3.9	3.7	0.4	0.5	0.6	0.9	1.0	1.2	4.9
(-08)	12.7 ODS	(-08)	12.7			97.8	93.0	9.7	12.7	14.9	23.4	25.4	30.2	137.5
12 ODS		1/2		N/A	5505-08S-08	4.0	3.7	0.4	0.5	0.6	0.9	1.0	1.2	4.9
(-08)	12.7 ODS	(-08)	12.7			101.9	93.0	9.7	12.7	14.9	23.4	25.4	30.2	137.5
5/8 ODS		1/2		N/A	5505-10B-08	3.8	3.6	0.5	0.6	0.7	0.9	1.0	1.2	4.9
(-10)	15.9 ODS	(-08)	12.7			96.3	91.4	12.7	16.0	17.9	23.4	25.4	30.2	137.5
5/8 ODS		1/2		N/A	5505-10S-08	4.0	3.6	0.5	0.6	0.7	0.9	1.0	1.2	4.9
(-10)	15.9 ODS	(-08)	12.7			100.3	91.4	12.7	16.0	17.9	23.4	25.4	30.2	137.5
5/8 ODS		3/4		5505-10-12	5505-10S-12	4.6	4.1	0.5	0.6	0.8	1.3	1.4	1.6	10.6
(-10)	15.9 ODS	(-12)	19.1			117.9	103.9	12.7	16.0	19.1	33.5	35.1	30.2	300.0
3/4 ODS		3/4		5505-12-12	5505-12S-12	4.8	4.2	0.6	0.8	0.9	1.3	1.4	1.6	10.6
(-12)	19.1 ODS	(-12)	19.1			121.2	106.4	15.7	19.1	21.7	33.5	35.1	41.4	300.0
7/8 ODS		3/4		5505-14-12	5505-14S-12	4.8	4.2	0.8	0.9	1.0	1.3	1.4	1.6	10.6
(-14)	22.2 ODS	(-12)	19.1			121.2	106.4	19.1	22.4	24.6	33.5	35.1	41.4	300.0
7/8 ODS		1		5505-14-16	5505-14S-16	5.5	5.0	0.8	0.9	1.0	1.7	1.7	2.0	18.3
(-14)	22.2 ODS	(-16)	25.4			139.2	126.0	19.1	22.4	25.8	42.7	42.9	50.8	519.9
1 ODS		1		5505-16-16	5505-16S-16	5.6	5.0	0.9	1.0	1.1	1.7	1.7	2.0	18.3
(-16)	25.4 ODS	(-16)	25.4			142.7	127.3	22.4	25.4	28.4	42.7	42.9	50.8	519.9
1-1/8 ODS		1		5505-18-16	5505-18S-16	5.5	5.0	0.9	1.1	1.2	1.7	1.7	2.0	18.3
(-18)	28.6 ODS	(-16)	25.4			140.2	127.0	22.4	28.7	31.4	42.7	42.9	50.8	519.9

\* Dash Size = Copper connection size x 16

\*\* "B" in the part number denotes a plastic plug. "S" in the part number denotes a steel plug.



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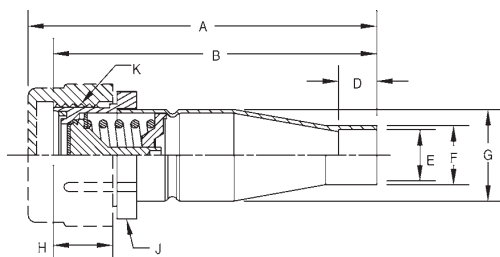
Copper Connection		Coupling Body		Part Number		Dimensions - Inches mm							Thread Size	Weight	
Inch	mm	Inch	mm	With Cap**	With Plug**	Coupling Length		Connection			Coupling Body		K	Ounces g	
Dash Size*		Dash Size*				with Cap A	B	Depth D	I.D. E	O.D. F	O.D. G	Thread Length H			Hex Diameter + J
1/4 ODS (-04)	6.4 ODS	3/8 (-06)	9.5	N/A	5502-04B-06	2.6 65.5	2.4 61.0	0.3 8.1	0.3 6.4	0.3 8.6	0.7 18.0	0.5 12.4	0.8 21.1	M20-1.5	1.7 6.7
3/8 ODS (-06)	9.5 ODS	3/8 (-06)	9.5	N/A	5502-06B-06	2.6 65.5	2.4 61.0	0.3 8.1	0.4 8.1	0.5 11.7	0.7 18.0	0.5 12.4	0.8 21.1	M20-1.5	1.7 6.7
1/4 ODS (-04)	6.4 ODS	1/2 (-08)	12.7	N/A	5502-04B-08	3.3 84.1	3.3 82.8	0.3 7.9	0.3 6.4	0.4 9.7	0.9 23.4	0.6 15.7	1.1 28.7	1"-20	3.1 88.1
1/4 ODS (-04)	6.4 ODS	1/2 (-08)	12.7	N/A	5502-04S-08	3.5 88.1	3.3 82.8	0.3 7.9	0.3 6.4	0.4 9.7	0.9 23.4	0.6 15.7	1.1 28.7	1"-20	3.1 88.1
3/8 ODS (-06)	9.5 ODS	1/2 (-08)	12.7	N/A	5502-06B-08	3.3 83.6	3.2 82.3	0.3 7.9	0.4 9.7	0.5 12.0	0.9 23.4	0.6 15.7	1.1 28.7	1"-20	3.1 88.1
3/8 ODS (-06)	9.5 ODS	1/2 (-08)	12.7	N/A	5502-06S-08	3.5 87.6	3.2 82.3	0.3 7.9	0.4 9.7	0.5 12.0	0.9 23.4	0.6 15.7	1.1 28.7	1"-20	3.1 88.1
1/2 ODS (-08)	12.7 ODS	1/2 (-08)	12.7	N/A	5502-08B-08	3.3 82.6	3.2 81.3	0.4 9.7	0.5 12.7	0.6 14.9	0.9 23.4	0.6 15.7	1.1 28.7	1"-20	3.1 88.1
1/2 ODS (-08)	12.7 ODS	1/2 (-08)	12.7	N/A	5502-08S-08	3.4 86.6	3.2 81.3	0.4 9.7	0.5 12.7	0.6 14.9	0.9 23.4	0.6 15.7	1.1 28.7	1"-20	3.1 88.1
5/8 ODS (-10)	15.9 ODS	1/2 (-08)	12.7	N/A	5502-10B-08	3.2 82.0	3.2 80.8	0.5 12.7	0.6 16.0	0.7 17.9	0.9 23.4	0.6 15.7	1.1 28.7	1"-20	3.1 88.1
5/8 ODS (-10)	15.9 ODS	1/2 (-08)	12.7	N/A	5502-10S-08	3.9 99.3	3.2 80.8	0.5 12.7	0.6 16.0	0.7 17.9	0.9 23.4	0.6 15.7	1.1 28.7	1"-20	3.1 88.1
5/8 ODS (-10)	15.9 ODS	3/4 (-12)	19.1	5502-10-12	5502-10S-12	3.9 117.9	3.7 103.9	0.5 12.7	0.6 16.0	0.8 19.1	1.3 33.5	1.0 25.1	1.6 41.4	1-7/16"-16	7.3 207.4
3/4 ODS (-12)	19.1 ODS	3/4 (-12)	19.1	5502-12-12	5502-12S-12	4.0 100.6	3.8 95.3	0.6 15.7	0.8 19.1	0.9 21.7	1.3 33.5	1.0 25.1	1.6 41.4	1-7/16"-16	7.3 207.4
7/8 ODS (-14)	22.2 ODS	3/4 (-12)	19.1	5502-14-12	5502-14-12	4.0 100.6	3.8 95.3	0.8 19.1	0.9 22.4	1.0 24.6	1.3 33.5	1.0 25.1	1.6 41.4	1-7/16"-16	7.3 207.4
7/8 ODS (-14)	22.2 ODS	1 (-16)	25.4	5502-14-16	5502-14S-16	4.7 118.9	4.4 111.0	0.8 19.1	0.9 22.4	1.0 25.8	1.7 42.7	1.0 26.2	1.9 47.8	1-3/4"-16	10.8 306.4
1 ODS (-16)	25.4 ODS	1 (-16)	25.4	5502-16-16	5502-16S-16	4.8 120.9	4.5 113.0	0.9 22.4	1.0 25.4	1.1 28.4	1.7 42.7	1.0 26.2	1.9 47.8	1-3/4"-16	10.8 306.4
1-1/8 ODS (-18)	28.6 ODS	1 (-16)	25.4	5502-18-16	5502-18S-16	4.8 120.9	4.5 113.0	0.9 22.4	1.1 28.7	1.2 31.4	1.7 42.7	1.0 26.2	1.9 47.8	1-3/4"-16	10.8 306.4

\* Dash Size = Copper connection size x 16

\*\* "B" in the part number denotes a plastic cap. "S" in the part number denotes a steel cap.

+ Dimension is across hex flats

Yellow = British Units - White = Metric Units



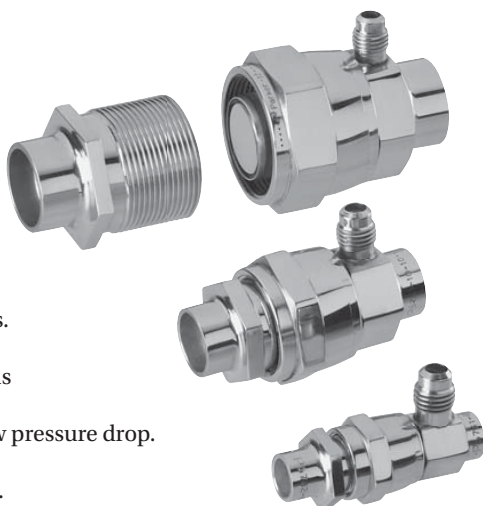
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## 5700 Series One-Shot™

Parker's 5700 one-shot brass couplings allow for easy installation of pre-charged systems and provide nearly full flow when completely connected. Applications typically include split air conditioning systems, split heat pumps, manufactured homes, and pre-charged line sets.

Single-use coupling contains a diaphragm that is pierced upon connection and folded back into the coupling to provide a high flow path and low pressure drop.

Final metal-to-metal seal prevents air inclusion.



### Benefits

- **Standard Material:**  
 Body ⇒ Brass  
 Connections ⇒ Brass coupling
- **Temperature Rating:** -40°C to 121°C  
 (-40°F to +250°F)
- **Approvals:** U.L. listed; File No: SA7511  
 RoHS Compliant

Basic Coupling Size	O.D. Tube Size Inches	Female Coupling Half without Charging Port (Includes Plug)	Female Coupling Half with Charging Valve Port less Cap and Core (Includes Plug)	Male Coupling Half with Protector Cap less Mounting Flange	Male Coupling Half with Charging Valve Port less Cap and Core (Includes Plug)	Mounting Flanges for 5782 Couplings Only		Charging Port Cap	Charging Valve Core
						Bolt Hole Dia. 0.15 (#10 Screw)	Bolt Hole Port (#14 Screw)		
-6	1/4	5780-4-6	5781-4-6	5782-4-6	5783-4-6	5706-22-6	5700-22-6	221014-4B	222034-4
-6	5/16	5780-5-6	5781-5-6	5782-5-6	-	5706-22-6	5700-22-6	221014-4B	222034-4
-6	3/8	5780-6-6	5781-6-6	5782-6-6	5783-6-6	5706-22-6	5700-22-6	221014-4B	222034-4
-10	1/2	5780-8-10	5781-8-10	5782-8-10	5783-8-10	FD67-1008-12	FD57-1111-10	221014-4B	222034-4
-10	5/8	5780-10-10	5781-10-10	5782-10-10	-	FD67-1008-12	FD57-1111-10	221014-4B	222034-4
-10	3/4	5780-12-10	5781-12-10	5782-12-10	5783-12-10	FD67-1008-12	FD57-1111-10	221014-4B	222034-4
-11	1/2	5780-8-11	5781-8-11	5782-8-11	5783-8-11	5700-22-10	150-22-8	221014-4B	222034-4
-11	5/8	5780-10-11	5781-10-11	5782-10-11	-	5700-22-10	150-22-8	221014-4B	222034-4
-11	3/4	5780-12-11	5781-12-11	5782-12-11	5783-12-11	5700-22-10	150-22-8	221014-4B	222034-4
-11	7/8	5780-14-11	5781-14-11	5782-14-11	5783-14-11	5700-22-10	150-22-8	221014-4B	222034-4
-12	3/4	5780-12-12	5781-12-12	5782-12-12	-	FD57-1111-12	FD57-1110-12	221014-4B	222034-4
-12	7/8	5780-14-12	5781-14-12	5782-14-12	-	FD57-1111-12	FD57-1110-12	221014-4B	222034-4
-12	1-1/8	5780-18-12	5781-18-12	5782-18-12	-	FD57-1111-12	FD57-1110-12	221014-4B	222034-4

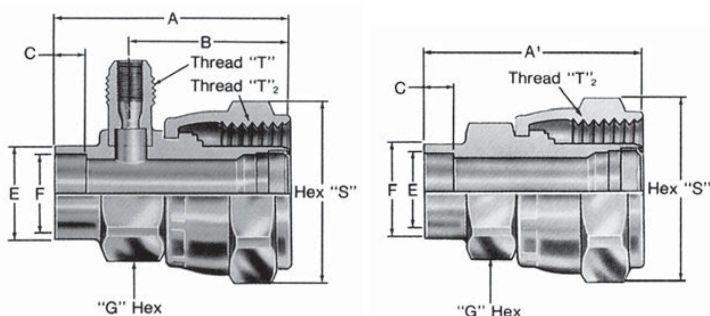
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# 5700 Series One-Shot TM Female part

Basic Coupling Size	O.D. Tubing Size Inches	Coupling Dash Size	Thread "T"	Thread "T2"	Dimensions - Inches (mm)							
					A	A1	B	C	E	F	G	S
-6	1/4	-4-6	7/16"-20	5/8"-18	1.55	1.30	1.06	0.19	0.25	0.38	0.62	0.81
					39.37	33.02	26.92	4.83	6.35	9.65	15.75	20.57
-6	5/16	-5-6	7/16"-20	5/8"-18	1.55	1.30	1.06	0.19	0.32	0.44	0.62	0.81
					39.37	33.02	26.92	4.83	8.13	11.18	15.75	20.57
-6	3/8	-6-6	7/16"-20	5/8"-18	1.55	1.30	1.06	0.19	0.38	0.50	0.62	0.81
					39.37	33.02	26.92	4.83	9.65	12.70	15.75	20.57
-10	1/2	-8-10	7/16"-20	1-1/16"-12	1.81	1.56	1.24	0.25	0.50	0.62	1.00	1.31
					45.97	39.62	31.50	6.35	12.70	15.75	25.40	33.27
-10	5/8	-10-10	7/16"-20	1-1/16"-12	1.86	1.61	1.24	0.25	0.62	0.75	1.00	1.31
					47.24	40.89	31.50	6.35	15.75	19.05	25.40	33.27
-10	3/4	-12-10	7/16"-20	1-1/16"-12	1.92	1.67	1.24	0.25	0.75	0.91	1.00	1.31
					48.77	42.42	31.50	6.35	19.05	23.11	25.40	33.27
-11	1/2	-8-11	7/16"-20	1-1/8"-12	1.85	1.60	1.28	0.25	0.50	0.62	1.00	1.31
					46.99	40.64	32.51	6.35	12.70	15.75	25.40	33.27
-11	5/8	-10-11	7/16"-20	1-1/8"-12	1.90	1.65	1.28	0.25	0.62	0.75	1.00	1.31
					48.26	41.91	32.51	6.35	15.75	19.05	25.40	33.27
-11	3/4	-12-11	7/16"-20	1-1/8"-12	1.96	1.71	1.28	0.25	0.75	0.91	1.00	1.31
					49.78	43.43	32.51	6.35	19.05	23.11	25.40	33.27
-11	7/8	-14-11	7/16"-20	1-1/8"-12	2.06	1.81	1.28	0.31	0.88	0.98	1.00	1.31
					52.32	45.97	32.51	7.87	22.35	24.89	25.40	33.27
-12	3/4	-12-12	7/16"-20	1-7/16"-16	2.26	2.01	1.60	0.25	0.75	0.91	1.38	1.69
					57.40	51.05	40.64	6.35	19.05	23.11	35.05	42.93
-12	7/8	-14-12	7/16"-20	1-7/16"-16	2.36	2.11	1.60	0.31	0.88	1.03	1.38	1.69
					59.94	53.59	40.64	7.87	22.35	26.16	35.05	42.93
-12	1-1/8	-18-12	7/16"-20	1-7/16"-16	2.43	2.18	1.60	0.31	1.12	1.28	1.38	1.69
					61.72	55.37	40.64	7.87	28.45	32.51	35.05	42.93

Yellow = British Units - White = Metric Units



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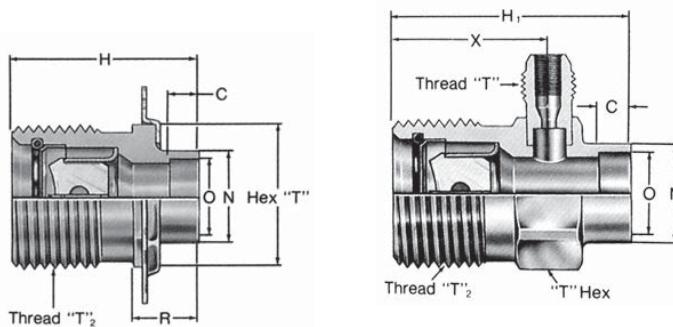
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# 5700 Series One-Shot TM Male part

Basic Coupling Size	O.D. Tubing Size Inches	Coupling Dash Size	Thread "T"	Thread "T <sub>2</sub> "	Dimensions - Inches mm							
					C	H	H <sub>1</sub>	N	O	R	T	X
-6	1/4	-4-6	7/16"-20	5/8"-18	0.19	1.21	1.46	0.38	0.25	0.5	0.75	0.98
					4.83	30.73	37.08	9.65	6.35	12.7	19.05	24.89
-6	5/16	-5-6	7/16"-20	5/8"-18	0.19	1.21	1.46	0.44	.32	0.5	0.75	0.98
					4.83	30.73	37.08	11.2	8.128	12.7	19.05	24.89
-6	3/8	-6-6	7/16"-20	5/8"-18	0.19	1.21	1.51	0.5	0.38	0.5	0.75	0.98
					4.83	30.73	38.35	12.7	9.652	12.7	19.05	24.89
-10	1/2	-8-10	7/16"-20	1-1/16"-12	0.25	1.37	1.66	0.62	0.5	0.52	1.06	1.1
					6.35	34.8	42.16	15.7	12.7	13.21	26.92	27.94
-10	5/8	-10-10	7/16"-20	1-1/16"-12	0.25	1.43	-	0.75	0.62	0.56	1.06	-
					6.35	36.32	-	19.1	15.75	14.22	26.92	-
-10	3/4	-12-10	7/16"-20	1-1/16"-12	0.25	1.52	1.66	0.91	0.75	0.65	1.06	1.1
					6.35	38.61	42.16	23.1	19.05	16.51	26.92	27.94
-11	1/2	-8-11	7/16"-20	1-1/8"-12	0.25	1.48	1.78	.62	0.5	0.5	1.12	1.21
					6.35	37.59	45.21	15.7	12.7	12.7	28.45	30.73
-11	5/8	-10-11	7/16"-20	1-1/8"-12	0.25	1.54	1.84	0.75	0.62	0.56	1.12	1.22
					6.35	39.12	46.74	19.1	15.75	14.22	28.45	30.99
-11	3/4	-12-11	7/16"-20	1-1/8"-12	0.25	1.63	1.84	0.91	0.75	0.65	1.12	1.22
					6.35	41.4	46.74	23.1	19.05	16.51	28.45	30.99
-11	7/8	-14-11	7/16"-20	1-1/8"-12	0.31	1.7	1.92	1.03	0.88	0.72	1.12	1.22
					7.87	43.18	48.77	26.2	22.35	18.29	28.45	30.99
-12	3/4	-12-12	7/16"-20	1-7/16"-16	0.25	1.78	-	0.91	0.75	0.63	1.44	-
					6.35	45.21	-	23.1	19.05	16	36.58	-
-12	7/8	-14-12	7/16"-20	1-7/16"-16	0.31	1.87	-	1.03	0.88	0.72	1.44	-
					7.87	47.5	-	26.2	22.35	18.29	36.58	-
-12	1-1/8	-18-12	7/16"-20	1-7/16"-16	0.31	1.98	-	1.28	1.12	0.84	1.44	-
					7.87	50.29	-	32.5	28.45	21.34	36.58	-

Yellow = British Units - White = Metric Units



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# RC01C Series Automotive

Parker's RC01C automotive service coupling provides easy evacuating and charging of HFC-134a mobile air conditioning systems.

## Application:

Evacuating and charging of HFC-134a automotive air conditioning systems.

RC01YF Series are suitable for R1234YF

## Benefits

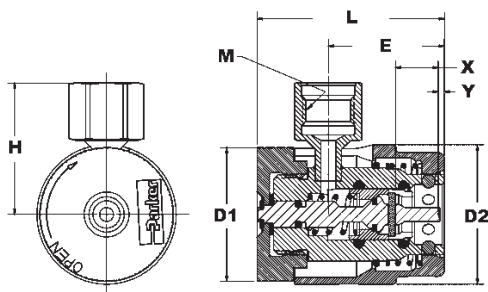
- **Standard Material:**  
Red anodized knob on the high side and blue anodized knob on the low side, along with distinct sizes, assist in preventing cross-contamination between sections of the system.  
**Brass coupling, with or without plating, provides corrosion resistance.**
- **Temperature Rating:** -40°C to 121°C (-40°F to +250°F)
- **Approvals:** U.L. listed; File No: SA7511 (US Patent No:RE34.781)



Part Number	Drawing	System Side	Finish	D1	D2	L	E	H	M	X
RC01C-002	1	Low Side	Plated	31.8	33.3	44.2	27.5	31.2	M14x1.5	8.3
RC01YF-002	1	Low Side	Brass	31.8	33.1	44.5	27.6	31.2	M12x1.5	10.2
RC01C-003	1	High Side	Plated	31.8	33.3	43.2	36.5	31.2	M14x1.5	8.3
RC01YF-003	1	High Side	Brass	31.7	33.1	48.5	31.9	31.2	M12x1.5	10.5
RC01C-021	1	Low Side	Brass	31.8	33.3	44.2	27.5	31.2	M14x1.5	8.3
RC01C-022	1	High Side	Brass	31.8	33.3	43.2	26.5	31.2	M14x1.5	8.3
RC01C-006	2	Low Side	Plated	31.8	33.3	44.2	27.5	32.1	5/8-18 UNF-2A	8.3
RC01C-007	2	High Side	Plated	31.8	33.1	43.2	26.5	32.1	5/8-18 UNF-2A	8.3
RC01C-011	2	Low Side	Plated	31.8	33.3	44.2	27.5	29.4	7/16-20 UNF-2A	8.3
RC01C-012	2	High Side	Plated	31.8	33.3	43.2	26.5	29.4	7/16-20 UNF-2A	8.3
RC01C-023	2	Low Side	Brass	31.8	33.3	44.2	27.5	29.4	7/16-20 UNF-2A	8.3
RC01C-024	2	High Side	Brass	31.8	33.3	43.2	26.5	29.4	7/16-20 UNF-2A	8.3

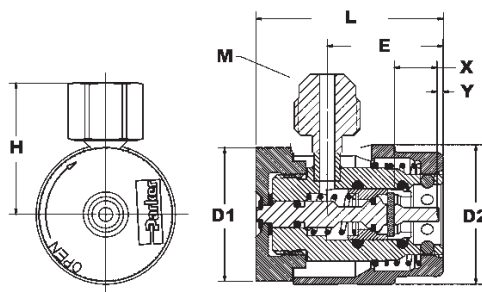
## Drawing 1

Service Coupling Assembly



## Drawing 2

Service Coupling Assembly



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## Miscellaneous

Heat Exchangers  
Vibration Absorbers  
Capillary Couplers



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## Miscellaneous

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# Heat Exchangers

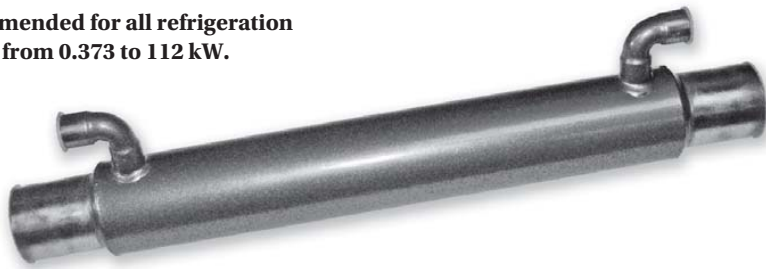
## For increased Performance and System Protection

### Suction Line Heat Exchangers (SLHE)

improve refrigeration system performance and are proven refrigeration system components for increased efficiency.

Heat exchanger reduces the risk of having oil foam in the crankcase of the compressor by partwise evaporation of the little droplets in the suction gas flow before they enter the compressor.

**SLHE are recommended for all refrigeration systems ranging from 0.373 to 112 kW.**



## Benefits

- Improved Heat Transfer
- Internal Wave Design controls pressure drop and gas velocity for quiet operation
- Rigid Design for Reliability - Less susceptible to fatigue and premature failure
- High-temperature brass brazing throughout
- Leak tested for trouble free operation
- Available in all-copper or steel construction
- Improves expansion valve operation

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## Copper Heat Exchangers

Model No.	Nominal Capacity kW	Suction Line ID Inches	Liquid Line ID Inches	Length cm	Design pressure bar	Shipping Weight kg
HX1/2	0.37	1/2	1/4	29.21	34.48	0.45
HX3/4	0.56	5/8	3/8	29.85	34.48	0.45
HX1	0.75	5/8	3/8	34.93	48.28	0.9
HX1.1/2	1.12	7/8	3/8	36.83	48.28	0.9
HX2	1.50	1-1/8	3/8	38.10	27.59	1.35
HX3	2.24	1-1/8	1/2	38.10	48.28	1.35
HX5	3.73	1-3/8	5/8	36.20	27.59	1.8
HX7.1/2	5.60	1-5/8	5/8	43.18	27.59	1.8
HX10	7.46	2-1/8	7/8	45.72	27.59	3.15
HX15	11.19	2-1/8	7/8	63.50	27.59	4.5
HX20	14.92	2-1/8	1-1/8	68.58	27.59	4.95

## Steel Heat Exchangers

Model No.	Nominal Capacity kW	Suction Line ID Inches	Liquid Line ID Inches	Length cm	Design pressure bar	Shipping Weight kg
HX25	18.65	2-5/8	1-1/8	73.34	31.03	7.65
HX30	22.38	2-5/8	1-3/8	73.34	31.03	7.65
HX35	26.11	2-5/8	1-3/8	73.34	31.03	7.65
HX40	29.84	3-1/8	1-3/8	73.34	31.03	9
HX50	37.30	3-1/8	1-5/8	73.34	31.03	9
HX60	44.76	4-1/8	1-5/8	75.88	31.03	14.4
HX75	55.95	4-1/8	2-1/8	75.88	31.03	14.4
HX80	59.68	4-1/8	2-1/8	75.88	31.03	14.4
HX100	74.60	5-1/8	2-1/8	78.42	24.83	19.35
HX125	93.25	5-1/8	2-1/8	78.42	24.83	19.35
HX150	111.9	6-1/8	2-5/8	78.42	24.83	22.95

### Compatibility:

- Compatible for use with all refrigerants,
- Materials are also compatible for use with CO<sub>2</sub>.

### Certification:

- PED 97/23/EC Annex I
- All models are U.L. Listed, File SA 5925



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## VABD Vibration Absorber

For the reduction of vibration transmitted within the suction and discharge lines

The Parker Virginia VABD Series of Vibration Absorbers, are an update of the previous VABE design. The VABD is purposely built to minimise the transmission of vibrations that can occur in both the discharge and suction lines of refrigeration and air conditioning systems.

The prolonged transmission of movement throughout the suction and discharge lines can lead to system leaks, and increased fatigue, this can be costly and present a danger to the system, the VABD Series ensure the minimisation of these risks.



### Benefits

- Stainless steel hose and braid on all sizes
- Available in a wide range of inches (1/4 inch - 4 1/8 inch) and metric (6 mm - 108 mm) fittings
- Solid copper connectors
- Leak free operation beyond the pressure limits of conventional bronze types
- UL listed (SA13233)
- CE-C-0509-04-28
- Working temperature range: -40°C to +120°C
- Compatible for use with all refrigerants
- Materials are also compatible for use with CO<sub>2</sub>.

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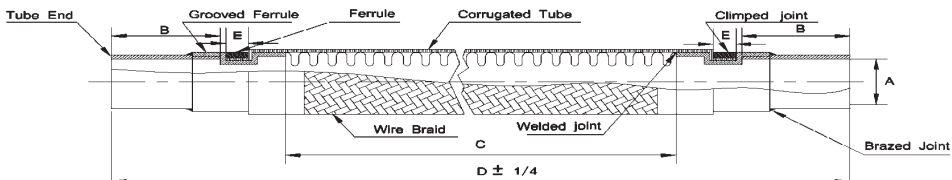
## Materials

Corrugated Tube	Wire Braid	Grooved Ferrule	Ferrule	Tube End
Type 304	Type 304	Type 304	Type 304	Copper

## Dimensions & Maximum Working Pressures

Model No.	Actual OD of Copper tubing (inch)	Dimension mm					Max Working Pressure bar	Burst Pressure bar
		A (I.D)	B (±3)	C (±3)	D (±6)	E (±1.5)		
VABD02SS	1/4"	6.7	17	133	202	10	44.81	224.07
VABD03SS	3/8"	9.6	18	141	215	10	44.81	224.07
VABD04SS	1/2"	12.8	18	151	225	10	44.81	224.07
VABD05SS	5/8"	16.2	20	169	247	10	44.81	224.07
VABD06SS	3/4"	19.2	23	180	266	11	44.81	224.07
VABD07SS	7/8"	22.5	25	211	301	11	44.81	224.07
VABD09SS	1-1/8"	28.8	32	223	329	12	41.35	206.75
VABD11SS	1-3/8"	35.3	35	274	392	14	37.9	189.52
VABD13SS	1-5/8"	41.7	40	295	425	16	35.14	175.74
VABD17SS	2-1/8"	54.5	50	370	520	16	27.56	137.84
VABD21SS	2-5/8"	67.0	60	434	613	19	24.12	120.61
VABD25SS	3-1/8"	79.6	70	481	680	19	22.05	110.27
VABD29SS	3-5/8"	92.5	85	579	812	21	13.09	39.28
VABD33SS	4-1/8"	104.9	90	589	832	21	13.09	39.28

Model No.	Actual OD of Copper tubing mm	Dimension mm					Max Working Pressure bar	Burst Pressure bar
		A (I.D)	B (±3)	C (±3)	D (±6)	E (±1.5)		
VABD06MMSS	6	6.7	17	133	202	10	44.81	224.07
VABD10MMSS	10	10.2	18	141	215	10	44.81	224.07
VABD12MMSS	12	12.2	18	151	225	10	44.81	224.07
VABD15MMSS	16	16.2	20	169	247	1	44.81	224.07
VABD18MMSS	18	18.3	23	180	266	11	44.81	224.07
VABD22MMSS	22	22.5	25	211	301	11	44.81	224.07
VABD28MMSS	28	28.3	32	223	329	12	41.35	206.75
VABD35MMSS	35	35.3	35	274	392	14	37.9	189.52
VABD42MMSS	42	42.5	40	295	425	16	35.14	175.74
VABD54MMSS	54	54.5	50	370	520	16	27.56	137.84
VABD64MMSS	64	64.5	60	434	613	19	24.12	120.61
VABD76MMSS	76	76.5	70	481	680	19	22.05	110.27
VABD89MMSS	89	89.5	85	579	812	21	13.09	39.28
VABD108MMSS	108	108.5	90	589	832	21	13.09	39.28



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# Copper Service Filter-Driers

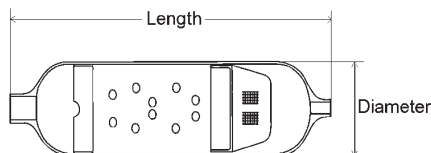


**Copper service Filter Driers** ensure the filtration, dehydration and the retention of acids. This range of filter drier is suitable for small unit of refrigeration, air conditioning and heat pump.

Filter driers are made without welding or brazing to minimizing the risk of leakage. Parker offers a complete range of filter driers with loose bead or solid cores to give an answer to all applications. All copper filter driers are 100% molecular sieve and are in accordance to ASERCOM recommendation.

## Technical Data

Part Number	Description	Molecular Sieve Weight (g)	Connection				Dim. mm		Max. Capacity kW			Max. Drying Capacity Kg Ref.	Filtration Micron
			Inlet		Outlet		Diam.	length	R134a	R404A R507	R 22		
			OD	ID	OD	ID							
ATA100ZE38	Copper Drier 5/8 10 g XH7	10	-	4.9	-	2.15	5/8"	125	0.6	0.42	0.7	1.3	100
AEXA100M	Copper Drier 10g 5/8 XH9	10	-	6.45	-	2.3	5/8"	114	0.8	0.5	0.8	1.3	100
AEXA100L	Copper Drier 5/8 10 g XH9	10	-	6.45	-	3.2	5/8"	114	1.05	0.7	1.1	1.3	100
LGIANTXH9	Copper Drier Little Giant XH9	10	1/4"	4.9	1/4"	2.3	3/4"	193	0.8	0.5	0.8	1.3	100
058070-00	MMS-80 Copper Drier Non directional	10	1/4"	3/16"	1/4"	3/16"	3/4"	187	3.2	2.2	3.5	1.3	100
ATB150XA05	Copper Drier 3/4 15 g R134a	15	-	6.15	-	3.15	3/4"	125	1.4	1	1.5	1.95	100
AEXB150L	Copper Drier 15 g 3/4 XH9 Inlet	15	-	6.45	-	3.15	3/4"	120	1.4	1	1.5	1.95	100
AEXB150M	Copper Drier 15 g 3/4 XH9 Inlet	15	-	6.5	-	2.35	3/4"	120	0.8	0.5	0.8	1.95	100
ATB150XA50	Copper Drier	15	-	6.5	-	6.5	3/4"	120	6	3.8	6.05	1.95	100
ATB150XE04	Copper Drier 3/4	15	-	6.55	-	2.15	3/4"	120	0.6	0.42	0.7	1.95	100
ATB200XA04	Copper Drier 3/4 20 g R134a	20	-	6.15	-	3.15	3/4"	149	1.4	1	1.5	2.6	100
ATB200XA10	Copper Drier 3/4 XH9	20	-	6.35	-	2.3	3/4"	145	0.8	0.5	0.8	2.6	100
AEXB200M	Copper Drier 20g 3/4 XH9 INLE	20	-	6.45	-	2.3	3/4"	145	0.8	0.5	0.8	2.6	100
AEXB200L02	3/4 DIA Copper Drier 20 g	20	-	6.45	-	3.2	3/4"	145	1.4	1	1.5	2.6	100
ATC200XF30	Copper Drier	20	-	6.45	-	2.6	1"	114	5.4	0.6	0.9	2.6	100
032134-00	MMS-200 Copper Drier Directional step down	20	3/8"	5/16"	3/8"	5/16"	1"	267	9.2	6.3	10	2.6	100
ATC250XA07	Copper Drier 1 25 g R134a	25	-	6.15	-	3.15	1"	120	1.4	1	1.5	3.25	100
AEX30GI01	Copper Drier	30	5/16"	6.15	5/16"	3.15	1"	300	1.4	1	1.5	3.9	100
ATC300XE34	Copper Drier 1 30 g R134a	30	-	6.15	-	6.05	1"	145	5.2	3.5	5.6	3.9	100
HERCUL XH9	Copper Drier Hercules XH9	30	7.94	6.5	7.94	3.3	1"	233	1.5	1.05	1.6	3.9	100
ATC300XT95	Copper Drier 30G with cap	30	-	6.5	-	6.5	1"	141	5.5	3.8	6.1	3.9	100
ATLAS	Copper Drier all refrigerant	50	8	6.55	8	6.55	1"	280	5.6	3.8	6.1	6.5	100



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# Copper Kap Kits

Copper Kap Kits are complete product assembly with filter drier, Flare 1/4" inlet connection and capillary tube.

Copper Kap kits can be delivered with or without accumulator.

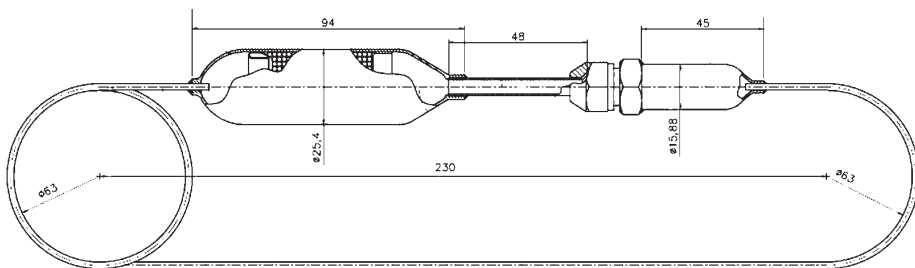
## Technical Data

Part Number	Description	Molecular Sieve Weight (g)	Connection (Inch)				Capillary Tube Length	Packaging
			OD	ID	OD	ID		
AEXKK2H25VUK	XH9	15	6.35	4.9	2.45	2.45	3048	50
KK1H25	AEXKK1H25 XH9	15	1/4 SAE		2.1	0.91	1981	15
KK1L25	AEXKK1L25 XH9	15	1/4 SAE		2.06	0.79	1981	15
KK2H25	AEXKK2H25 XH9	15	1/4 SAE		2.4	1.24	3048	15
KK2L25	AEXKK2L25 XH9	15	1/4 SAE		2.36	1.06	3048	15

## VUK

Without accumulator

Part Number	Description	Maximum Capacity kW			Max. Drying Capacity (Kg Ref.)
		R134a	R404A / R507	R22	
AEXKK2H25VUK	XH9	0.8	0.54	0.8	1.95
KK1H25	AEXKK1H25 XH9	0.12	0.08	0.1	1.95
KK1L25	AEXKK1L25 XH9	0.08	0.05	0.05	1.95
KK2H25	AEXKK2H25 XH9	0.23	0.15	0.22	1.95
KK2L25	AEXKK2L25 XH9	0.17	0.11	0.16	1.95



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# Capillary Couplers

Capillary couplers allow connection of control equipments like pressure switch, pressure gauge etc.

Connections are 1/4" SAE (FLARE) with hexagonal brass nut, available with or without depressors valves.

Models are available with depressors valves in one connection.

Capillary couplers are suitable for the connection of pressure gauge in discharge line and reduce pressure pulsation for increasing the stability of the needle.

## Technical Data

Part Number	Capillary Tube			Connection		Option
	OD	ID	Length mm	Inlet Flare (SAE)	Outlet	
PCP0005	2.9	1.63	500	1/4"	1/4"	-
PCP0010	2.9	1.63	1000	1/4"	1/4"	-
PCP0015	2.9	1.63	1500	1/4"	1/4"	-
PCP1000SV	2.9	1.63	1000	1/4"	1/4"	Depressor valve
PCP1500SV	2.9	1.63	1500	1/4"	1/4"	Depressor valve
PCP500SV	2.9	1.63	2000	1/4"	1/4"	Depressor valve

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