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sealing & shielding



Racor Filter Division Europe

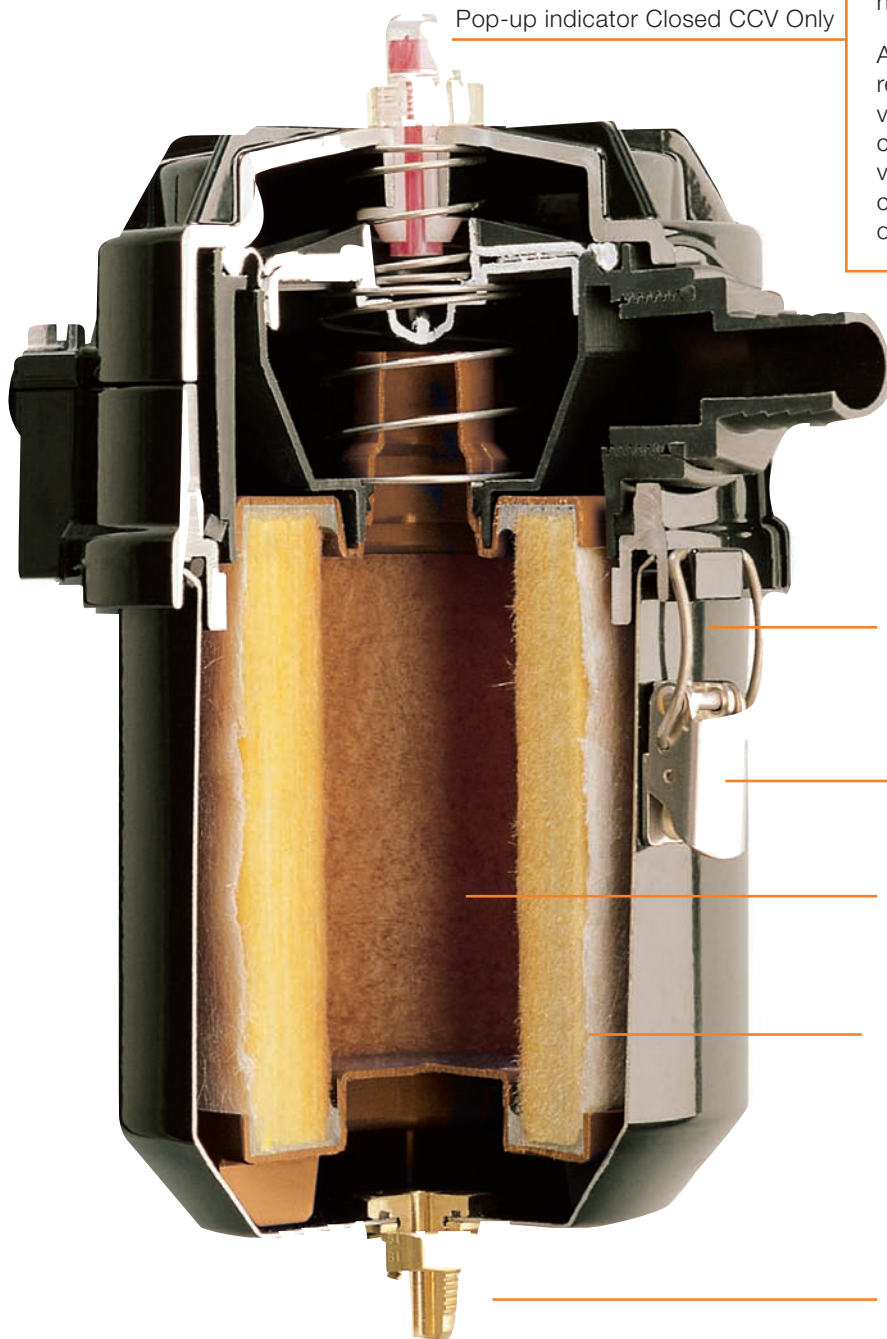
Crankcase Ventilation Products and Solutions



ENGINEERING YOUR SUCCESS.

Features and Benefits

Racor Crankcase Ventilation



Pop-up indicator Closed CCV Only

Pop-up style indicator that alerts of a bypass condition and the need for a filter change.

A unique crankcase pressure regulator with integral bypass valve minimizes variation in crankcase pressure. Excessive variation in crankcase pressure can damage seals, cause loss of oil, and other problems.

Left or right-hand inlet/outlet options.

High-efficiency oil separation down to 0.3 microns.

Durable glass-filled nylon and die cast aluminum components.

Steel with epoxy powder coating.

Stainless steel latches for tool-less filter change.

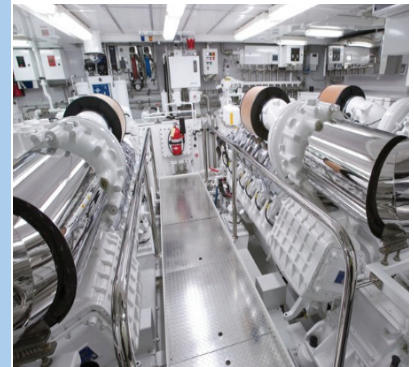
Replaceable high performance filter with depth-loading, micro-glass fiber coalescing media.

Extended filter service interval from the Vaporbloc filter.

Drain check valve allows collected oil to be returned to the crankcase. This eliminates frequent draining and significantly reduces oil consumption.

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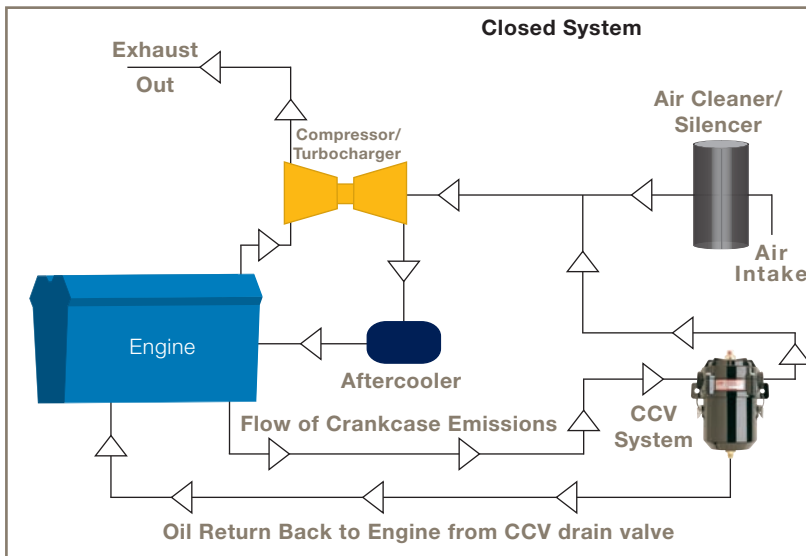


Crankcase Ventilation

Market Challenges and Overview

The Problem – Engines Releasing Pollutants Through Unfiltered Breathers

Environmental concerns and legislation to control crankcase emissions have increased significantly. To further reduce the total emissions of engines, in some applications it is becoming necessary to close the crankcase breather system, routing these gases into the air intake system.



Closed system: For applications requiring more stringent emissions requirements, a closed crankcase filter is recommended. In this application, the exhaust from the crankcase filter is routed to the inlet side of the turbo. A regulator in the crankcase filter controls the vacuum in the crankcase to ensure proper operation.

Open system: Crankcase blow-by is produced when combustion gases under high pressure are blown past the piston rings into the crankcase. As these blow-by gases pass through the crankcase, they become contaminated. Racor's Crankcase Ventilation System removes these contaminations. The exhaust can then be allowed to vent to the atmosphere. (See schematic opposite)



CCV4500 installed on a CAT engine, mobile above and marine below.

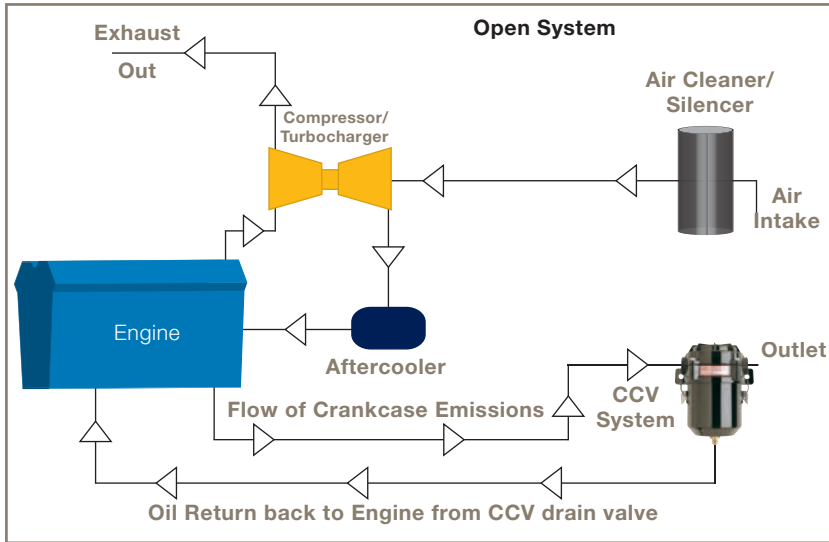


- In closed environments like generator sets and marine engine rooms, damage to surrounding equipment such as radiators and electronic control panels can cause hazardous conditions, down time, and expensive maintenance.

- Oil mist will coat and contaminate the aftercooler and other engine components. This coating reduces engine cooling capacity, causes a degradation of engine performance and reliability over time, and shortens the useful service life of the engine components.

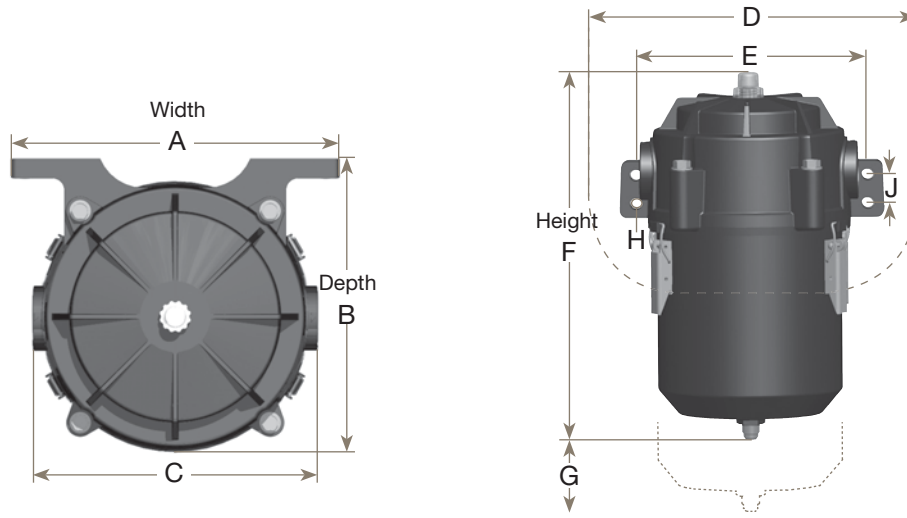
- The engine intake inhales contaminated gases, clogging air filter systems, and damaging turbocharger components. It is imperative that oil mist be removed from the crankcase emissions prior to introduction into the engine air intake in closed breather systems.

Open Crankcase Ventilation



In an open system, the crankcase breather is connected to the Crankcase Ventilation (CV) filter assembly. The CV outlet is open to atmosphere. This configuration is simple to install and is an effective oil mist removal system for applications which allow crankcase venting to atmosphere. There may be some visible blow-by gases present from the CV outlet.

CCV and CV Dimensions



Dimension	4500 Series		6000 Series		8000 Series		12000 Series	
	IN	CM	IN	CM	IN	CM	IN	CM
A	7.2	18.3	8.6	21.8	10.6	26.9	10.6	26.9
B	5.6	14.2	7.3	18.5	9.3	23.6	9.3	23.6
C	5.6	14.2	7.1	18.0	9.1	23.1	9.1	23.1
D	7.5	19.1	11.3	28.7	13.3	33.8	13.3	33.8
E	6.0	15.2	7.5	19.1	9.5	24.1	9.5	24.1
F¹	9.3	23.6	12.0	30.5	13.9	35.3	18.0	45.7
G²	2.3	5.7	4.0	10.1	5.0	12.7	6.0	15.2
H	0.43	1.09	0.37	0.94	0.43	1.09	0.43	1.09
J³	N/A	N/A	0.93	2.4	1.06	2.7	1.06	2.7

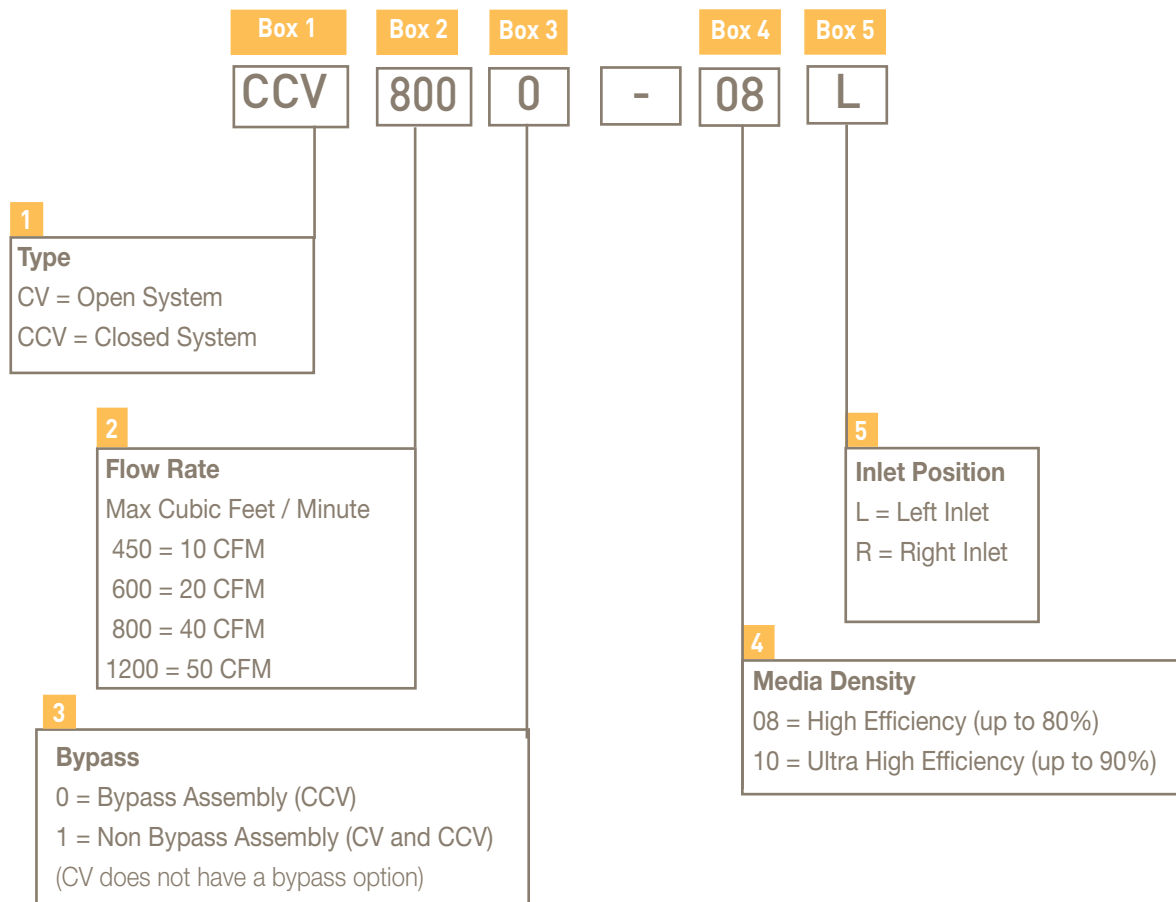
¹ Dimension "F" is 0.75" less for CV Systems.

² Dimension "G" is the minimum filter removal clearance - allow more room if possible for ease of service.

³ Dimension "J" is not applicable on CCV4500 assemblies because there are only two (2) mounting holes. All other units have four (4) mounting holes.

Ordering Matrix

Crankcase Ventilation



Included: Standard Crankcase Ventilators come with a specified engine block check valve return fitting, swivel fittings and a length of oil drain hose - for these specifications please refer to the detailed tables.

Not included: There are a wide range of additional items that must be ordered separately such as:- hose adaptors, hose barbs, conversion kits, heater kits, tap sleeves, filter gauges, spacers etc. Please see the relevant section in this catalogue for ordering information.

Ordering Example:

CCV8000-08L is a closed crankcase ventilation system that has maximum flow to 40 cubic feet per minute (CFM) with a bypass. The element included is a high media density (up to 80%) and the inlet position is on the left side.

Racor CCV Sizing:

CCV systems should be specified using engine blow-by flow, based on engine manufacturer's data. The tables (right) will help you to easily select a CCV, which will allow for a typical filter element service period of 750 hours, for larger applications it is possible to use multiple CCVs.

CCV and CV Specifications

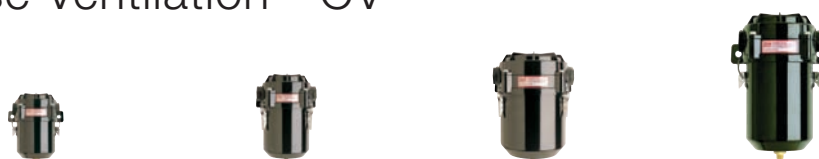
Closed Crankcase Ventilation - CCV



	CCV4500	CCV6000	CCV8000	CCV12000
Maximum Flow Rate	10 CFM (283 LM)	20 CFM (566 LM)	40 CFM (1133 LM)	50 CFM (1416 LM)
Maximum Engine Rating	400 HP (298 KW)	800 HP (597 KW)	1600 HP (1193 KW)	2000 HP (1491 KW)
Inlet/Outlet Port Size	1 3/16"-12 STOR	1 5/8"-12 STOR	1 7/8"-12 STOR	1 7/8"-12 STOR
Weight	3.3 lbs (1.5 kg)	5.0 lbs (2.3 kg)	8.7 lbs (3.9 kg)	9.3 lbs (4.2 kg)
Replacement Filter Media Density: Low	CCV55248-04	N/A	N/A	N/A
Replacement Filter Media Density: High	CCV55248-08	CCV55274-08	CCV55222-08	CCV55222-12-08
Replacement Filter Media Density: Ultra	CCV55248-10	CCV55274-10	CCV55222-10	CCV55222-12-10
Housing Material	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.
Crankcase Pressure Regulator	Integral	Integral	Integral	Integral
Bypass/Change Indicator	Integral or Remote	Integral or Remote	Integral or Remote	Integral or Remote
Engine Block Check Valve Return Fitting	1/4" NPT	1/4" NPT	3/8" NPT	3/8" NPT
Swivel Fitting (Qty.)	#6 JIC (2 pcs.)	#6 JIC (2 pcs.)	#8 JIC (2 pcs.)	#8 JIC (2 pcs.)
Oil Drain Hose I.D.	0.375 in. (0.95 cm)	0.375 in. (0.95 cm)	0.5 in. (1.27 cm)	0.5 in. (1.27 cm)

Units can be manifolded to handle higher flow rates.

Open Crankcase Ventilation - CV



	CV4501	CV6001	CV8001	CV12001
Maximum Flow Rate	10 CFM (283 LM)	20 CFM (566 LM)	40 CFM (1133 LM)	50 CFM (1416 LM)
Inlet/Outlet Port Size	1 3/16"-12 STOR	1 5/8"-12 STOR	1 7/8"-12 STOR	1 7/8"-12 STOR
Weight	3.3 lbs (1.5 kg)	5.0 lbs (2.3 kg)	8.7 lbs (3.9 kg)	9.3 lbs (4.2 kg)
Replacement Filter Media Density: High	CCV55248-08	CCV55274-08	CCV55222-08	CCV55222-12-08
Housing Material	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.
Engine Block Check Valve Return Fitting	1/4" NPT	1/4" NPT	1/4" NPT	3/8" NPT
Swivel Fitting (Qty.)	#6 JIC (2 pcs.)	#6 JIC (2 pcs.)	#8 JIC (2 pcs.)	#8 JIC (2 pcs.)
Oil Drain Hose I.D.	0.375 in. (0.95 cm)	0.375 in. (0.95 cm)	0.5 in. (1.27 cm)	0.5 in. (1.27 cm)

Units can be manifolded to handle higher flow rates.

CCV Fitting/Hose Kits

CCV4500 Series Assemblies

Part No.	Description
CCV55024	(1) 3/4" fitting, (1) 1" fitting, (1) 3/4" ID x 4 foot long hose, (1) 1" ID x 4 foot long hose, (4) clamps and (4) ties
CCV55025	(2) 1" fittings, (1) 1" ID x 8 foot long hose, (4) clamps and (4) ties
CCV55037	(1) 1-1/4" fitting, (1) 1" fitting, (1) 1-1/4" ID x 4 foot long hose, (1) 1" ID x 4 foot long hose, (4) clamps and (4) ties
CCV55038	(1) 3/4" fitting, (1) 1" fitting, (1) 3/4" ID x 6 foot long hose, (1) 3/4" Tee fitting, (1) 1" ID x 4 foot long hose, (8) clamps and (8) ties

CCV6000 Series Assemblies

Part No.	Description
CCV55046	(2) 1-1/4" fittings, (1) 1-1/4" ID x 8 foot long hose, (4) clamps and (4) ties
CCV55047	(2) 1-1/4" fittings, (1) 1-1/4" Tee fitting, (1) 1-1/4" ID x 10 foot long hose, (8) clamps and (8) ties
CCV55048	(2) 1-1/4" fittings, (1) 1-1/2" ID x 4 foot long hose, (1) bushing reducer, (1) 1-1/4" ID x 4 foot long hose, (4) clamps and (4) ties
CCV55049	(2) 1-1/4" fittings, (1) 1-1/2" ID x 5 foot long hose w/2" cuff, (1) bushing reducer, (1) 1-1/4" ID x 4 foot long hose, (4) clamps and (4) ties

CCV8000 and CCV12000 Series Assemblies

Part No.	Description
CCV55067	(2) 1-1/2" fittings, (1) 1-1/2" ID x 10 foot long hose, (1) bushing reducer, (4) clamps and (4) ties
CCV55068	(2) 1-1/2" fittings, (1) 1-1/2" Tee fitting, (1) 1-1/2" ID x 12 foot long hose, (2) bushing reducers, (8) clamps and (8) ties
CCV55069	(2) 1-1/2" fittings, (1) 1-1/2" ID x 5 foot long hose w/2" cuff, (1) bushing reducer, (1) 1-1/2" ID x 5 foot long hose, (4) clamps and (4) ties

Please note: measurements in the tables above are imperial, one foot = 12 inches = 30.48cm.

Hose and Fitting Kits

Hose and fitting kits include inlet and outlet fittings and enough hose for a typical installation of a CCV assembly. CCV assemblies require special fittings only available from Racor. In order to determine the correct hose and fitting kit, you need to know the quantity and outside diameter of the engine breather(s). Hose and fitting kits are available in various sizes and configurations.



Bulk Hose Kits

Drain Hoses

Part Number	Push-Lok Hose Size
CCV836-6-25	3/8 I.D., 25' Roll
CCV836-6-50	3/8 I.D., 50' Roll
CCV836-8-25	1/2 I.D., 25' Roll
CCV836-8-50	1/2 I.D., 50' Roll



Inlet/Outlet Hose Kits

(available by the foot)

Part Number	Corrugated Hose Size (I.D.)
CV1034-01	3/4"
CV1100-01	1"
CV1114-01	1 1/4"
CV1112-01	1 1/2"

Hump Hose Fittings

These are designed to be used with existing air cleaner to turbo rubber adapters.

Part Number	Hose
CCV55540	0.75"
CCV55113	1.0"
CCV55114	1.25"
CCV55115	1.5"

CCV 90° Hose Adapters



Part Number	CCV55121
Use with Model	CCV6000
Hose Size	1-1/4" I.D.



Part Number	CCV55547-10
Use with Model	CCV8000
Part Number	CCV55547-02
Use with Model	CCV4500



CCV Check Valves

Part Number	Thread	Type	Barb Size
DRK 00370	1/4" NPT	straight fitting	13 mm
DRK 00371	M14 x 1.5	90 degree fitting	13 mm



CCV Hose Barbs



CCV Assembly	Hose Barb Part Number	Size
CCV4500	CCV55251	0.75"
CCV4500	CCV55250	1"
CCV4500	CCV55280	1.25"
CCV6000	CCV55089	0.75"
CCV6000	CCV55268	1.25"
CCV6000	CCV55121	1.25" (90°)
CCV6000	CCV55267	1.5"
CCV8000/CCV12000	CCV55218	1.5"

CCV8000 Conversion Kits



The CCV55613-08 and CCV55613-10 allow the CCV8000 to be converted to a CCV12000. The CCV12000 series offers 60% additional media. The CCV12000 series is great for applications where extra capacity

is desired and immediate engine accessibility is not available. It allows for increased efficiency and longer service intervals. Kit includes element, wear spacer, o-rings, and CCV12000 bowl.

Part Number	Element
CCV55613-08	High Density
CCV55613-10	Ultra Density

CCV Heater Kits

CCV heater kits are an optional accessory for engine applications operating in severe cold weather. Emulsion and/or ice deposits on the element and inside the canister develop when the air blast from the radiator cools the

CCV assembly. The emulsions are created by water vapors condensing and combining with oil droplets in the cold air stream of the CCV system. This build-up can prematurely choke the filter and reduce filter life. The heater band

and insulating sleeve are placed over the CCV canister and insulate the assembly to prevent the emulsion build-up. Reduced filter life can be avoided by installing a Racor CCV Heater Kit.



CCV Assembly	Heater Kit Part Number
CCV4500	CCV55461
CCV6000	CCV55462
CCV8000	CCV55463

Kits include heater band and insulating sleeve only. (CCV assembly sold separately.)

Remote Filter Gauges

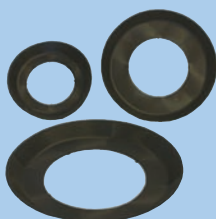


The CCV55615-01 electronic remote filter gauge features a green light that turns red at 8 inWg pressure indicating the need for filter changeout.

CCV55012 non electric Filter Minder was designed to inform the user that the filter being monitored has become restricted. Included in Kit: Gauge & Bracket, 1/8"-27 NPT Fitting with Internal 40 micron filter and 10 feet of 1/4" OD EPDM hose. All Hardware Included.

Heavy-Duty Wear Spacers Tap Sleeves

CCV Unit	Spacer Number
CCV4500	CCV55390
CCV6000	CCV55385
CCV8000	CCV55374
CCV12000	CCV55374



Part No.	Size Diameter, Length, Hose Barb
CCV30100	3"(D), 5"(L), 1"(HB)
CCV40100	4"(D), 5"(L), 1"(HB)
CCV50125	5"(D), 6"(L), 1-1/4"(HB)
CCV60125	6"(D), 6"(L), 1-1/4"(HB)

Note:

CCV60125 includes 1 1/4" x 1 1/2" Bushing (connects to 1 1/2" ID Hose)

Racor Product Range



aerospac
 climate control
 electromechanical
 systems
 fluid & gas handling
 hydraulics
 pneumatics
 process control
 sealing & shimming

Racor Filter Division Europe
 Super Impactor
 Crankcase Ventilation Separator

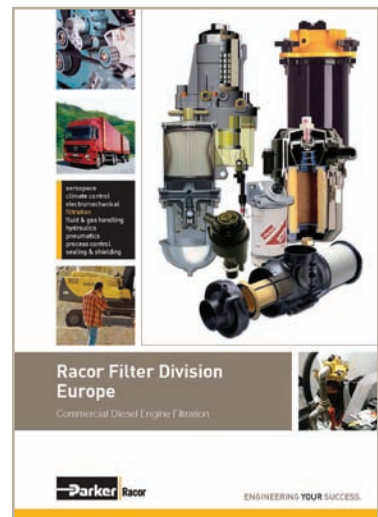

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Racor Superimpactor FDRB538UK

With over 20 years' experience in crankcase filtration Parker Racor has been developing new innovative high efficiency technology for crankcase emission control.

Parker introduce the new benchmark for ultra high performance, fit for life, closed crankcase ventilation solutions. The SuperImpactor CCV eliminates environmental pollution from crankcase emissions, allowing open and closed crankcase circuit solutions at >98% efficiency, with no service element.

Smaller, lighter, more economical and with higher efficiencies than its closest rivals, the systems also include the ultimate crankcase pressure regulator offering the tightest crankcase pressure control.

Racor Marine Solutions FDRB538UK

Ask a sailor about engine protection, about filtration or about reliability and performance. Whether they are a captain of a superyacht, sailboat, fishing boat or tug, the chances are the one-word answer will be the same as it has been for over four decades...Racor

Delivering the quality and reliability mariners most respect is a customer driven effort at Racor. We view every marine vessel, and the sailors who depend upon them for livelihood or leisure, as a personal responsibility.

Products that are the result of computer-aided design and stringent manufacturing processes, solidly built to withstand the rigors of the marine environment.

Racor Commercial Fuel FDRB360UK

Everytime you add fuel, you add millions of tiny contaminants...small enough to be invisible, but big enough to destroy injectors, pumps and profitability. Racor's industrial and automotive product range of customer proven spin-on fuel filter water separators, turbine fuel filters and crankcase ventilators are the solution.

Whether you operate a truck, bus, generator or pump set, you need to know that every time you switch on the ignition you will hear the engine fire into life, each time and every time. There is no better way to ensure engine reliability than with good quality filtration. Whatever and wherever your application, we have a system which will meet your requirements.

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