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

Racor Filter Division Europe

Engine Air Filtration Systems

Parker Racor

ENGINEERING YOUR SUCCESS.

Parker's technical resources provide the correct filtration technologies that conform to your requirements. That's why thousands of manufacturers and equipment users around the world rely on Parker Filtration products and people.

Hydraulic, Lubrication & Coolant Filtration
High-performance filtration systems for protection of machinery in industrial, mobile and military/marine applications.

Filtration & Separation
Complete line of compressed air/gas filtration and separation products; coalescing, particulate and adsorption filters in many applications in many industries.

Racor Fuel Conditioning & Filtration
Parker air, fuel and oil filtration systems provide quality protection for engines operating in any environment, anywhere in the world.

Process & Chemical Fluid Filtration
Liquid filtration systems for beverage, chemical and food processing; cosmetic, paint, water treatment; photo-processing; and micro-chip fabrication.

System Contamination Monitoring
On-line dynamic particle analysis, off-line bottle sampling and fluid analysis and measurement of water content polluting the oil in a system.

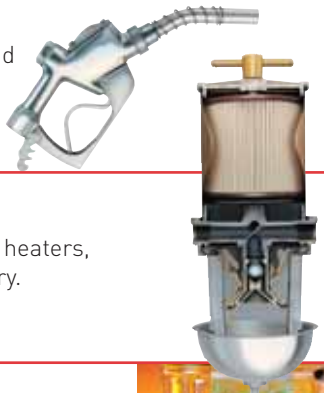
Parker Filtration's global reputation as a reliable supplier of superior filtration products is the result of a focused and integrated development and manufacturing system.

Parker Filtration consolidates quality filtration products, manufactured for process filtration, air and gas filtration and separation, fuel conditioning and filtration, fluid power products and hydraulic filter products into one broad-based range that covers many markets and most applications, as detailed here.

Racor The World's Best Filtration starts with the

Over 30 years of innovation, over 30 years of quality...

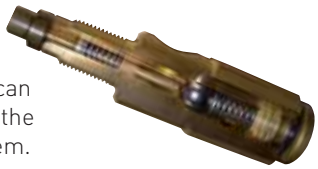
1969 **Diesel Fuel**
1969 It all began with a patented, and exceptionally efficient new way to remove water, dirt, rust and algae from diesel fuel.



1975 **Cold**
1975 Racor pioneers integrated fuel heaters, now standard throughout the industry.

1983 **Technology**
1983 Aquabloc® filters debut, and Racor Filter/Separators make another significant leap in filtration efficiency.

1984 **Protection**
1984 The Racor Sentinel System shuts down an engine before a major component failure can cause permanent damage. Sentinel remains the preferred all mechanical engine control system.



1985 **Growth**
1985 Racor becomes a division of Parker Hannifin Corporation, further strengthening one of the world's most respected brands.

1987 **Standard Equipment**
1987 The first Navistar powered Ford E Series and F Series vehicles roll off the production line with the revolutionary, compact and flexible Racor Spin On Series.

1989 **Quality**
1989 Racor earns Ford Q1 certification, the first in a series of quality awards from one of the world's leading engine and equipment manufacturers.

1991 **The Environment**
1991 Along with protecting engines, Racor makes products that protect the environment. Lifeguard is a marine fuel/air separator that prevents fuel from escaping overboard from vent lines during refuelling.

1992 **Oil**
1992 Every bit as vital and every bit as dirty as fuel.The Racor solution is an ingenious one, a cleanable oil filter that puts an end to frequent filter changes and disposal.

Contents

World's Best Engineeing

1994

Air

1994 Engines gasping for a breath of fresh air breathe easy with the introduction of synthetic, multi stage Racor "twice the life" air filters.

1995

CCV Products

1995 Racor starts cleaning up engine rooms with a crankcase ventilation system that keeps oily blow-by from damaging turbo chargers and other precision components.

1996

Plant expansion

1996 In addition to the world class manufacturing facility in Modesto, Racor opens locations in Oklahoma, South Carolina, Brazil, Korea and South Africa. In Europe Morley, West Yorkshire in the UK becomes the centre of excellence in Europe.

1997

Racor Hydrocarbon

1997 Racor Hydrocarbon Filters and Vessels debut – offering customers flow rates to 1000 gpm and higher.

2000

UK Facility

2000 Having moved out of Morley into a purpose built factory at nearby Dewsbury in 1998, Racor sees significant growth in Europe. 2000 saw the expansion of manufacturing capability to include all spin on series filters, and the establishment of a state-of -the-art design and test, research and development facility.

2001

Global OEM

2001 Racor continues to forge long term relationships with Global OEM companies to produce sound, cost effective engineered solutions to meet specific application requirements.

2002

High performance air filters

2002 Racor purchases Farr opening up opportunities in medium and heavy duty Engine Air applications.

2007

Ultra high efficiency CCV integration

2007 European design and engineering consolidation to provide CCV integrated OEM solutions.

2008

Lab and engine test facilities

2008 A major investment in Dewsbury facilities ensure technical resources are in place to support customer needs. Parker Racor purchases Village Marine-Water filtration desalinisation products.

The most trusted name in engine protection

Racor technology takes the guesswork out of engine protection and Racor manufacturing quality and attention to detail ensures every customer gets the filtration and separation solution they are looking for.

To make product selection easier, Racor's extensive range has been catalogued into four market/ application groups detailed below.

Hydrocarbon Filter Vessels and Elements From the refinery to the injector, at the terminal and on the forecourt, Racor has a hydrocarbon filter vessel and element solution to meet your fuel delivery needs.

Ref: FDRB130GB1

Commercial Fuel Filtration 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 filter/ separators, turbine fuel filters and crank case ventilators are the solution.

Ref: FDRB129GB1

Engine Air Filtration Systems Fresh air. That's what Racor filtration is all about. Because when engines breathe easier they perform better with more power, more torque and with improved fuel economy. Whatever your application, there's a Racor Air Filtration system that will help you and your engine breathe easy.

Ref: FDRB172UK

Leisure Marine and Commercial Marine Filtration Ask a sailor about engine protection. About filtration, about reliability and performance. Whether they are the master of a superyacht, sailboat, fishing boat or tug, the chances are the one word answer will be the same as it has been for more than three decades...Racor. Marine filtration products trusted across the seven seas.

Ref: Commercial Marine FDRB175UK
Ref: Leisure Marine FDRB136GB1

For further information email:
filtrationinfo@parker.com

Light to Medium Duty Industrial Mobile and Marine

ECO Series Spin-On Disposable Air Cleaners

With its revolutionary spin-on design, the completely disposable ECO Series offers faster, safer, more trouble-free service than any other air cleaner today. Built for rugged use, it combines maximum engine protection with fuel-efficient performance and long service life.

The ECO Series provides two significant improvements in engine protection. When the filter loads with dirt and replacement is required, collected dust and debris stay safely contained inside the disposable housing, eliminating the chance of contaminating the air intake system during air filter service. Since the ECO Series uses no clean air gaskets, you never have to worry about gasket leakage. The outlet simply hooks up to the intake with a rubber connection and clamp, creating a leak-tight seal.

Air flow distribution and dust loading are uniform throughout the high-performance filter cone pack, resulting in increased capacity and lower pressure differential for improved horsepower and fuel economy.

All ECO Series Spin-On Filters feature water-resistant media for improved performance and optimum life.

All Eco media are SAE rated to 99.9% efficiency (SAE J726C).

And most importantly, during changeouts, there are no seals or gaskets to replace.

ECO II

The first cone-type filter element that is both tapered and offset

Water-resistant media provides three to five times longer filter life than conventional filters

More useable media area than conventional filters

Media is SAE-rated to provide average efficiency of 99.9% (SAE J726C), with no seals or gaskets to replace

Beaded outlet

Paper pleats are permanently locked in place for reliable performance

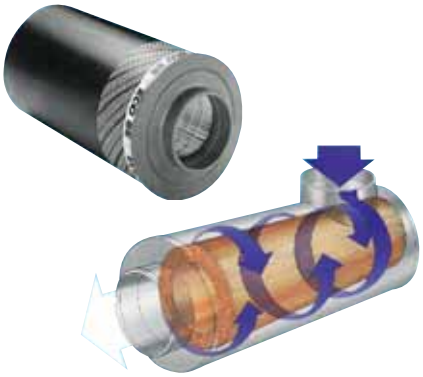
Requires no additional room to service element

Applications

Economical, disposable and lightweight

The revolutionary spin-on concept of the compact ECO filter range makes it the ideal choice for truck installations, plus industrial and marine engine packages operating between 150hp and 1000hp (300-2000cfm).

Safer, faster, trouble free servicing is assured with an ECO filter.



The ECO II was designed to provide lower replacement element cost on an **under hood truck application** due to the 2-piece design. The Inlet Adapter is a separate piece that stays on the truck and is purchased separately.

ECO operation

The tapered offset cone design employed in the ECO filters assures uniform air distribution, minimises air restriction and maximises element service life.

The extended area pleated element itself is fully supported and achieves an efficiency of 99.9% to SAE J726C for optimum engine protection.

Where space is at a premium the fully disposable ECO range is ideal as no additional space is required for element changeout.

The illustration below depicts the ECOLITE and shows the intake airflow from the side. The intake however can also be from one end, offering reverse flow flexibility.

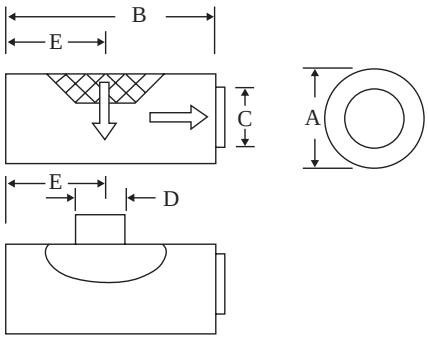
The ECO II used without the Inlet Adapter has become the standard in the Generator Set market. Air Flow is Outside-In with water drain holes around the perimeter.

The ECO II range

Weighing only half as much as conventional filters the side inlet ECO II has all the inherent benefits of the ECO range but employs a cone-type element that is both tapered and offset. This feature ensures that airflow distribution and dust loading are uniform throughout, resulting in lower restriction and better fuel economy. The ECO II can also be rotated to position the air intake at any angle.

ECO-SE

The ECO-SE is the ideal choice for today's smaller fleet vehicles and stationary engines up to 500hp (1000cfm).



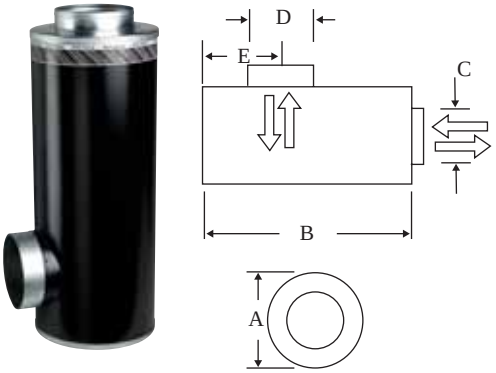
Ordering and Specification (ECO II Range)

Dimensions in mm (inches)						Air Flow in m³/min (CFM)			Weight	
Part No.	(Diameter) A	(Length) B	(Outlet) C	(Inlet) D	E	102mm w.g.	152mm w.g.	203mm w.g.	kg	lbs
071338001	247 (9.75)	610 (24)	152 (6)	No inlet adapter 152 (6)	228 (9)	21.2 (750) 23.2 (820)	26.6 (940) 29.5 (1040)	31.1 (1100) 34.5 (1220)	5.7 7.1	12.5 15.5
071338002	279 (11)	610 (24)	178 (7)	No inlet adapter 178 (7)	228 (9)	26 (920) 33 (1200)	33.4 (1180) 41.3 (1460)	39 (1380) 48.1 (1700)	7.4 8.8	16.2 19.2
071338003	343 (13.5)	610 (24)	178 (7)	No inlet adapter 178 (7)	228 (9)	31.7 (1120) 38.8 (1370)	39.3 (1390) 49 (1730)	45.3 (1600) 55.2 (1950)	8.6 10	19 22
071338004	343 (13.5)	457 (18)	178 (7)	No inlet adapter 178 (7)	228 (9)	32.3 (1140) 38.2 (1350)	40.7 (1440) 48.1 (1700)	45.3 (1600) 51 (1800)	7.7 9.1	16.9 19.9
071338005	343 (13.5)	381 (15)	178 (7)	No inlet adapter 178 (7)	190 (7.5)	32.3 (1140) 38.2 (1350)	40.7 (1440) 48.1 (1700)	45.3 (1600) 51 (1800)	6.3 7.7	14 17
071338007	279 (11)	610 (24)	178 (7)	No inlet adapter 178 (7)	292 (11.5)	26 (920) 33 (1200)	33.7 (1190) 41.3 (1460)	39.3 (1390) 48.1 (1700)	6.5 7.9	14.51 17.45
071338008	247 (9.75	457 (18)	152 (6)	No inlet adapter 152 (6)	228 (9)	20.1 (710) 26 (920)	26.3 (930) 29.1 (1030)	30.3 (1070) 33.7 (1190)	4.14 5.5	9.13 12.1
071338009	343 (13.5)	610 (24)	178 (7)	No inlet adapter		34.2 (1210)	45.3 (1600)	54 (1910)	5.5	9

Light to Medium Duty Industrial Mobile and Marine Applications

ECOLITE

The original ECO Series product, the ECOLITE is still the only air filter in the industry that you **can flow air either direction**. This allows a variety of installation options with the same part number filter. The ECOLITE can be mounted in any orientation or convenient location; under the hood or outside, direct or remote.



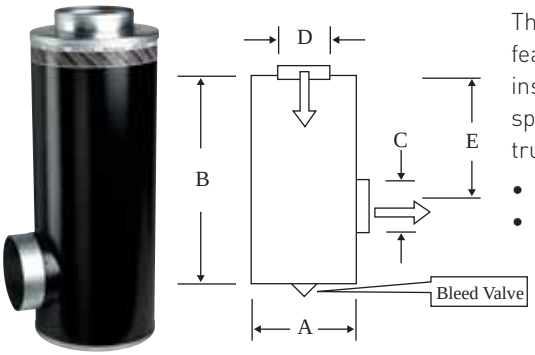
- Tapered offset cone design assures uniform air distribution, minimizes air restriction and maximizes element service life.
- Positive barrier, pleated paper media is set in a superior quality adhesive for a permanent seal.
- The only air filter available with choice of flow directions in a single part number.
- Airflow may enter or exit end opening.

Ecolite Technical Specifications

Dimensions in mm (inches)						Air Flow in m³/min (CFM)			Weight	
Part No.	(Diameter) A	(Length) B	(Outlet) C	(Inlet) D	E	102mm w.g.	152mm w.g.	203mm w.g.	kg	lbs
062891001	247 (9.75)	610 (24)	152 (6)	152 (6)	140 (5.5)	820 (23.2)	1020 (28.8)	1200 (33)	7.3	16
062891002	279 (11)	610 (24)	178 (7)	178 (7)	140 (5.5)	1100 (31.1)	1420 (40.2)	1650 (46.7)	8.6	19
062891003	343 (13.5)	610 (24)	178 (7)	178 (7)	140 (5.5)	1375 (38.9)	1730 (49)	1900 (53.8)	12.3	27
062891004	343 (13.5)	610 (24)	178 (7)	178 (7)	140 (5.5)	1079 (30.3)	1350 (38.2)	1590 (45)	7.4	16.3
062891007	247 (9.75)	610 (24)	152 (6)	152 (6)	305 (12)	820 (23.2)	1020 (28.8)	1200 (33)	7.3	16
062891010	343 (13.5)	610 (24)	178 (7)	178 (7)	140 (5.5)	1025 (29)	1300 (36.8)	1540 (43.6)	6.93	15.27

ECO-BC (Behind the Cab)

Designed for behind the cab installation on trucks, the ECO-BC must be mounted **vertical with Inside-Out Air Flow**. Also is used for under hood and engine compartment applications. The **rubber drain valve** in the bottom of the unit allows any ingested water or dirt to drain out.



This Spin-On disposable air cleaner features a Slimline design for vertical installations requiring tight or limited space restrictions such as behind the truck cab.

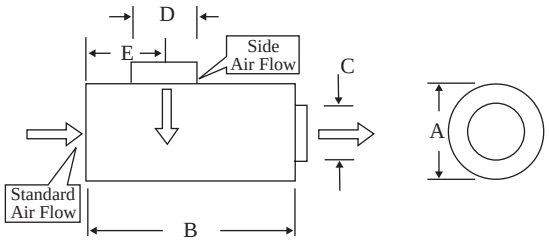
- Inside-out vertical applications only.
- Drain valve in base for water removal.

Eco BC Technical Specifications

Dimensions in mm (inches)						Air Flow in m³/min (CFM)			Weight	
Part No.	(Diameter) A	(Length) B	(Outlet) C	(Inlet) D	E	102mm w.g.	152mm w.g.	203mm w.g.	kg	lbs
094973001	279 (11)	610 (24)	178 (7)	178 (7)	142 (5.6)	1120 (23.2)	1450 (41)	1600 (45.3)	8.6	19
094973002	343 (13.5)	610 (24)	178 (7)	178 (7)	142 (5.6)	1450 (31.1)	1620 (49.5)	1750 (49.5)	12.3	27
094973003	247 (9.75)	610 (24)	152 (6)	152 (6)	142 (5.6)	875 (38.9)	1250 (35.4)	1250 (35.4)	7.3	16
094973004	247 (9.75)	457 (18)	152 (6)	152 (6)	231 (9.1)	720 (30.3)	1060 (30)	1060 (30)	4.73	10.42
094973005	343 (13.5)	381 (15)	178 (7)	178 (7)	244 (9.6)	980 (38.9)	1470 (41.6)	1470 (41.6)	7	15.43
094973006	279 (11)	457 (18)	152 (6)	178 (7)	142 (5.6)	810 (23.2)	1200 (33)	1200 (33)	5.73	12.64
094973007	279 (11)	457 (18)	178 (7)	178 (7)	142 (5.6)	1010 (29)	1490 (42.2)	1490 (42.2)	5.67	12.5

ECO-SE (Small Engine Applications)

The ECO-SE is designed for small engine applications. It also has two unique features. First, it has a urethane outlet tube which allow the filter to be mounted directly to a metal tube or turbo without an additional rubber connection. Second, the standard unit is a straight through air filter, air goes in one end and out the other. Intake adapters are available if you would like to remotely locate the intake. The side inlet version offers additional mounting flexibility.



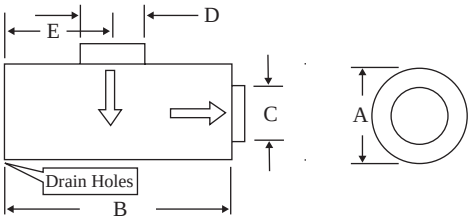
- For light and medium duty applications; smaller mobile and stationary engines up to 300 hp.
- Easy to service, compact, lightweight, high-efficiency design.
- Durable urethane outlet eliminates additional rubber connection.
- Straight-thru design improves pressure differential in smaller engine air intakes.
- Beaded cavity outlet.
- Drain holes for water removal.

Eco SE Technical Specifications

Dimensions in mm (inches)						Air Flow in m³/min (CFM)			Weight	
Part No.	(Diameter) A	(Length) B	(Outlet) C	(Inlet) D	E	102mm w.g.	152mm w.g.	203mm w.g.	kg	lbs
114500001	171 (6.75)	350 (13.8)	76 (3)	n/a	n/a	240 (6.8)	300 (8.5)	340 (9.6)	2.3	2.3
114500002	197 (7.75)	401 (15.8)	101 (4)	n/a	n/a	355 (10)	440 (12.5)	510 (14.4)	3	3
114500003	247 (9.75)	477 (18.8)	127 (5)	n/a	n/a	610 (17.3)	760 (21.5)	890 (25.2)	3.6	3.6
117122000	279 (11)	610 (24)	178 (7)	n/a	n/a	780 (22.1)	960 (27.2)	1180 (33.4)	5.9	5.9
Eco SE Side Inlet										
114880003	247 (9.75)	429 (16.9)	127 (5)	152 (6)	101 (4)	600 (17)	760 (21.5)	900 (25.5)	4.1	4.1
114880005	197 (7.75)	401 (15.8)	101 (4)	152 (6)	140 (5.5)	570 (11.9)	570 (16.1)	800 (22.6)	3.2	3.2

ECO-SM (Scheduled Maintenance)

The ECO-SM was designed to give **additional mounting flexibility** to the O.E.M. customer, while offering a greater value to the fleet that changes filter elements based on a scheduled maintenance program. Due to the various inlet tube locations, the ECO-SM is ideal for retrofit applications. It is for Outside-In Air Flow only and has drain holes around the perimeter.



- Easy upgrade for existing air cleaners with separate elements.
- Fast and easy to service with no housing to clean or gaskets to service.
- Beaded outlet.
- Economical scheduled maintenance design
- Choice of three inlet locations to match new or retrofit applications.
- Drain holes for water removal.

Eco Sm Technical Specifications

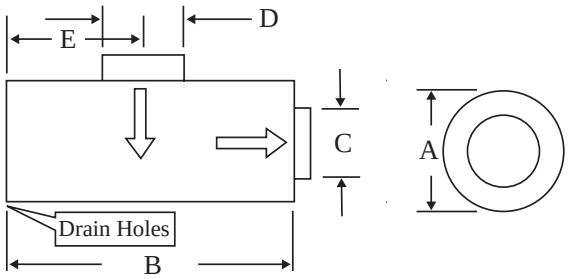
Dimensions in mm (inches)						Air Flow in m³/min (CFM)			Weight	
Part No.	(Diameter) A	(Length) B	(Outlet) C	(Inlet) D	E	102mm w.g.	152mm w.g.	203mm w.g.	kg	lbs
099842002	279 (11)	610 (24)	178 (7)	178 (7)	305 (12)	980 (27.7)	1220 (34.5)	1430 (40.5)	8.6	19
099842004	343 (13.5)	610 (24)	178 (7)	178 (7)	140 (5.5)	1100 (31.1)	1380 (39)	1620 (45.9)	12.3	27
099842005					305 (12)	1130 (32)	1420 (40.2)	1670 (47.3)	12.3	27
099842006					470 (18.5)	1030 (29.2)	1280 (36.2)	1500 (42.5)	12.3	27
099842007	343 (13.5)	457 (18)	178 (7)	178 (7)	140 (5.5)	1120 (31.7)	1400 (39.6)	1630 (46.1)	10.9	24
099842008	343 (13.5)	457 (18)	178 (7)	178 (7)	317 (12.5)	1060 (30)	1320 (37.4)	1550 (43.9)	10.9	24
099842009	343 (13.5)	457 (18)	178 (7)	178 (7)	140 (5.5)	1070 (30.3)	1330 (37.7)	1550 (43.9)	10	22.5
099842010	343 (13.5)	457 (18)	178 (7)	178 (7)	241 (9.5)	1060 (30)	1320 (37.4)	1530 (43.3)	10	22.5

Light to Medium Duty Industrial Mobile and Marine Applications

ECO-LL (Long Life)

The ECO-LL is similar to the ECO-SM, but is for applications where the customer wants to get the **longest life** from his air filter.

There are also more sizes available. It is also for **Outside-In Air Flow** only and has drain holes around the perimeter.



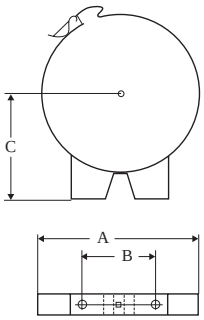
- Spin-On disposable features in a Long Life high performance version.
- Use when extended maintenance intervals, or severe service, or when element life improvement is desired.
- Choice of inlet locations.
- More media surface area than scheduled maintenance style.
- Beaded outlet.
- Drain holes for water removal.

Eco LL Technical Specifications

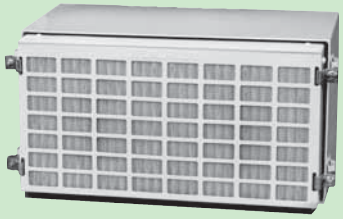
Dimensions in mm (inches)						Air Flow in m³/min (CFM)			Weight	
Part No.	(Diameter) A	(Length) B	(Outlet) C	(Inlet) D	E	102mm w.g.	152mm w.g.	203mm w.g.	kg	lbs
400820001	279 (11)	610 (24)	178 (7)	178 (7)	140 (5.5)	27.9 (985)	35.1 (1240)	41.8 (1475)	8.6	19
400820002					305 (12)	25.6 (905)	32.3 (1140)	37.9 (1340)	8.6	19
400820003					470 (18.5)	18.3 (645)	22.9 (810)	26.9 (950)	8.6	19
400820004	343 (13.5)	610 (24)	178 (7)	178 (7)	140 (5.5)	36.7 (1295)	46 (1625)	54 (1910)	9.8	21.5
400820005					305 (12)	33.1 (1170)	41.8 (1475)	49.1 (1735)	9.8	21.5
400820006					470 (18.5)	23.9 (845)	30 (1060)	35.4 (1250)	9.8	21.5
400820007	343 (13.5)	457 (18)	178 (7)	178 (7)	140 (5.5)	31.6(1115)	38.9 (1375)	45 (1590)	7.7	17
400820008	343 (13.5)	457 (18)	178 (7)	178 (7)	317 (12.5)	31.1 (1100)	37.9 (1340)	43.7 (1545)	7.7	17
400820009	343 (13.5)	381 (15)	178 (7)	178 (7)	140 (5.5)	29.9 (1055)	37.7 (1330)	44.2 (1560)	7	15.1
400820010	343 (13.5)	381 (15)	178 (7)	178 (7)	241 (9.5)	32.1 (1135)	40.6 (1435)	47.9 (1690)	7	15.1
400820014	279 (11)	457 (18)	178 (7)	178 (7)	140 (5.5)	27.5 (970)	34.5 (1220)	41.2 (1455)	6.2	13.5
400820015	279 (11)	457 (18)	178 (7)	178 (7)	317 (12.5)	20.2 (715)	25.6 (905)	30.4(1075)	6.2	13.5
400820016	381 (15)	610 (24)	203 (8)	203 (8)	140 (5.5)	Non Standard Filters, Not Stocked				
400820017					305 (12)					
400820018					470 (18.5)					
400820019	279 (11)	330(13)	178 (7)	178 (7)	190 (7.5)	20.1 (710)	26 (920)	31.1 (1100)	4.64	10.24
400820020	279 (11)	381 (15)	178 (7)	178 (7)	190 (7.5)	23.2 (820)	29.4 (1040)	34.8 (1230)	5.22	11.5
400820021	279 (11)	381 (15)	152 (6)	178 (7)	190 (7.5)	Non Standard Filters, Not Stocked				
400820022	279 (11)	457 (18)	152 (6)	178 (7)	317 (12.5)	18.4 (650)	23.1 (815)	27.2 (960)	5.79	12.77
400820023	279 (11)	330 (13)	152 (6)	178 (7)	190 (7.5)	20.4 (720)	25.5 (900)	30 (1060)	4.64	10.23
400820024	343 (13.5)	610 (24)	203 (8)	254 (10)	165 (6.5)	Non Standard Filters, Not Stocked				
400820025	381 (15)	610 (24)	203 (8)	254 (10)	165 (6.5)	Non Standard Filters, Not Stocked				

Eco Mounting Clamps

	Dimensions in mm (inches)			To be used with:					
Part No.	A	B	C	Eco II	Eco-SE	Eco-SM	EcoLITE	Eco-BC	Eco-LL
071921001	249 (9.8)	114 (4.5)	140 (5.5)	✔	✔		✔	✔	✔
071921002	280 (11)	127 (5)	155 (6.1)	✔		✔	✔	✔	✔
071921003	343 (13.5)	152 (6)	188 (7.4)	✔		✔	✔	✔	✔
071921006	381 (15)	152 (6)	208 (8.2)						✔
099049001	174 (6.85)	89 (3.5)	130 (5.12)		✔				
099049002	199 (7.85)	89 (3.5)	143 (5.62)		✔				
099049003	248 (9.77)	114 (4.5)	168 (6.6)		✔				



Medium to Heavy Duty Industrial M



Pamic Medium to Heavy Duty Air Cleaners

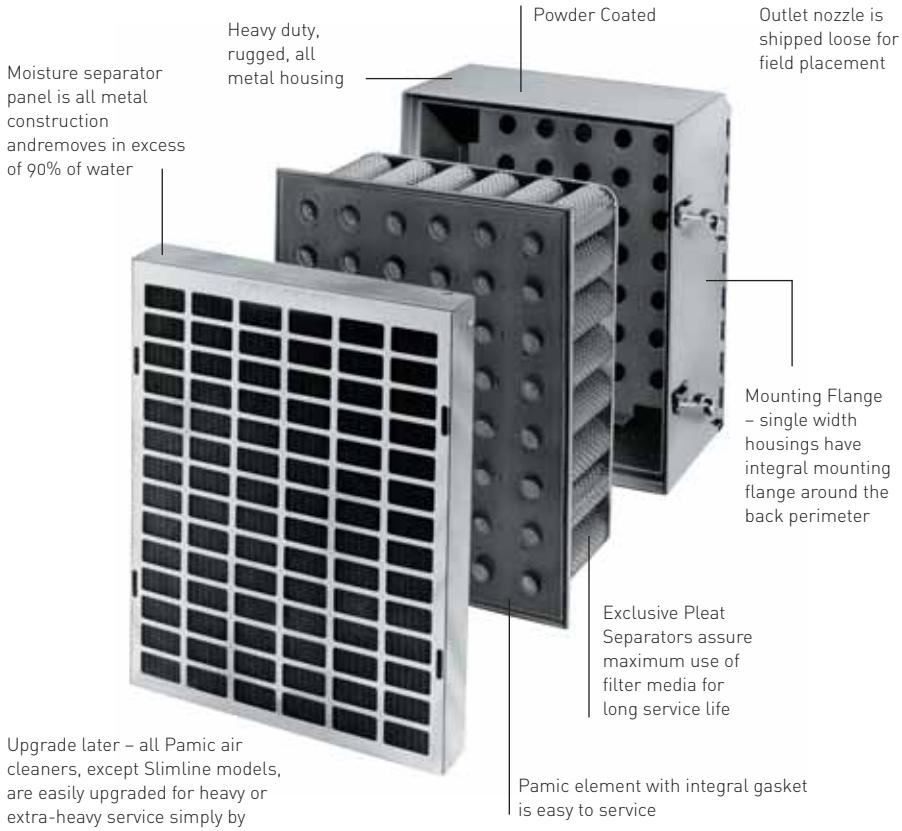
UniPamic Series Air Cleaners provide unmatched engine protection for a wide range of equipment, from on-highway trucks to compressors, stationary engines to marine engines.

Greatest Protection – The Pamic filter element has an average efficiency rating of 99.9% (SAE J726). It begins at a high level and continues to increase throughout the life of the filter.

Extended Service Life – The unique construction of the Pamic element with its exclusive mechanical pleat separation, provides more usable filter area than any competitive air cleaner, thus offering longer element life. UniPamic models feature an efficient moisture separator panel which removes over 90% of the water that may enter the face of the air cleaner. AutoPamic® models can be upgraded to include a gravity-discharged dust pre-cleaner. RotoPamic® models are upgradeable to either a compressed air or exhaust-aspirated pre-cleaner. An optional, easy-to-use service indicator tells when to change the filter element assuring maximum usage and lowest operating filter costs.

Increased Horsepower, Reduced Fuel Consumption – With its low intake air restriction and its greater effective media area than other dry-type air cleaners, the Pamic Series offers improved fuel economy and lowers per hour operating costs.

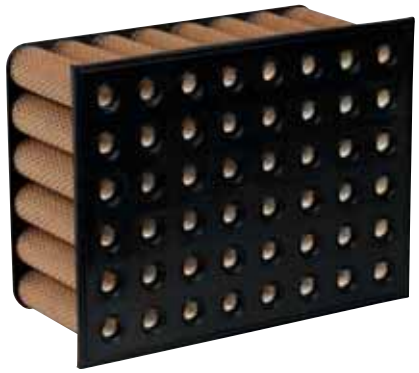
Easy To Service – No special tools or techniques, dirt is held inside the pleated filter element tubes. The filter is replaced from the dirty side of the air cleaner, reducing the danger of engine contamination. Because it is an integral part of the filter element, there are no separate gaskets to replace.



obile and Marine Applications

Basic UniPamic/Single Stage

- Moisture Separator panel
- Pamic Filter Element
- Air Cleaner Housing with integral mounting flanges and fasteners.
- Outlet nozzle must be ordered separately on all but Slimline double vertical kits. (see nozzle fitted column).



Basic Unipamic Kits

Ordering and Specification

No of Tubes			Part Numbers				Application		Dimensions			
Total	Wide	High	Kit Number	Moisture Seperator	Element Number	Recommended Outlet Nozzle O.D in mm (inches)	Flow Rate Range in m3/min (CFM)	Hp Range (KW)	Approx. Weight (kg)	(lbs)	Width in mm (inches)	Height in mm (inches)
9	3	3	062701003	056519010	012233003	76.2 (3)	2.8-7.1 (100-250)	37-93 (50-125)	11	25	218 (8.59)	218 (8.59)
12	3	4	062701004	056519011	012233004	76.2 (3)	7.1-8.5 (250-300)	93-112 (125-150)	14	30	218 (8.59)	277 (10.91)
24	4	6	062701010	056519016	012233007	101.6 (4)	9.9-17 (350-600)	130-223 (175-300)	20	44	277 (10.91)	394 (15.53)
32	4	8	062701012	056519002	012233008	127 (5)	14.2-22.6 (500-800)	186-298 (250-400)	25	55	277 (10.91)	512 (20.16)
40	5	8	062701013	056519003	012233009	127 (5)	17-28.3 (600-1000)	223-372 (300-500)	28	62	335 (13.22)	512 (20.16)
48	6	8	062701014	056519004	012233010	152.4 (6)	19.8-34 (700-1200)	261-447 (350-600)	31	69	394 (15.53)	512 (20.16)
64	8	8	062701015	056519005	012233011	152.4 (6)	28.3-45.3 (1000-1600)	372-596 (500-800)	36	79	512 (20.16)	512 (20.16)
128*	8	16	059713000	056519005x2	012233011x2	152.4 (6)x2	56.6-90.6 (2000-3200)	745-1193 (1000-1600)	70	155	1059 (41.69)	512 (20.16)

* Plus clamping fasteners on sides only. † Double side by side housing. Two air outlet nozzles required. Thereare no integral flanges on double housing. ‡ Double vertical housing. Outlet nozzle is factory installed in center of back on Slimline versions.** Recommended size. Order separately.

Replacement Elements

Total Tubes	Arrange-ment*	Ordering Number	Designation Number
2	1 x 2	012233001	P-2
4	2 x 2	012233002	P-4
6	2 x 3	012233012	P-6
9	3 x 3	012233003	P-9
12	3 x 4	012233004	P-12
12	2 x 6	012233014	P-12-26
16	4 x 4	012233005	P-16
16	2 x 8	012233018	P-16-28
18	3 x 6	012233017	P-18
20	4 x 5	012233006	P-20
24	4 x 6	012233007	P-24
24	3 x 8	012233019	P-24-38
30	5 x 6	012233015	P-30
32	4 x 8	012233008	P-32
36	6 x 6	012233020	P-36
40	5 x 8	012233009	P-40
48	6 x 8	012233010	P-48
64	8 x 8	012233011	P-64

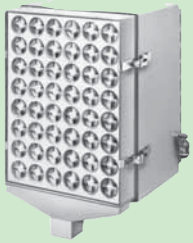
*Pamic air filters will fit either vertical or horizontal housings.

Outlet Tubes & Nozzles

Part No.	Diameter in mm (inches)	Length in mm (inches)	Style	Approx. Weight kg	lbs
015382200	50.8 (2)	101.6 (4.0)		0.45	1
015382204	57.1 (2.25)	101.6 (4.0)		0.45	1
015382208	63.5 (2.63)	101.6 (4.0)		0.45	1
015382210	66.8 (3)	101.6 (4.0)		0.45	1
015382300	76.2 (3.5)	101.6 (4.0)		0.45	1
015382308	88.9 (2.25)	101.6 (4.0)		0.45	1
015382408	114.5 (4.5)	101.6 (4.0)	Straight Tubes	0.68	1.5
015382500	127 (5)	101.6 (4.0)		0.68	1.5
015382508	139.7 (5.5)	101.6 (4.0)		0.91	2
015382600	152.4 (6)	101.6 (4.0)		0.91	2
015382700	177.8 (7)	101.6 (4.0)		0.91	2
041199001	76.2 (3)	38.1 (1.5)		0.32	0.7
041199005	139.7 (5.5)	54.1 (2.13)		0.63	1.4
041199006	152.4 (6)	54.1 (2.13)		0.72	1.6
041199007	177.8 (7)	54.1 (2.13)	Nozzles	1.13	2.5

*Four tube model is special order only. *Indicates two moisture separator panels and two filter elements in a single housing. *Airflow capacities beyond maximum recommendations will result in higher resistance and reduced filter life.

Two Stage Medium to Extra Heavy Service Air Cleaners



AutoPamic Air Cleaners

For Medium and Heavy

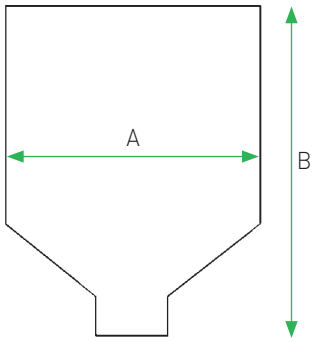
Medium service includes most on and off-highway uses such as gravel and ready-mix trucks, outdoor generator sets, garbage trucks, fire trucks, air compressors and pumps.

This AutoPamic air cleaner model with a gravity discharge pre-cleaner is the easiest to install. It may be used on all types of engines.

Note: While total system efficiency is 99.9%, this pre-cleaner is 86% efficient (per SAE J726c).

AutoPamic & RotoPamic Sizing

The chart below shows the number of filter tubes needed to meet engine airflow requirements. Match the CFM of your engine engine to the type of service the air cleaner will experience. recommended air cleaner size, for type of service shown, has been calculated for an optimum range of engine intake restriction, dirt holding capacity and filter service life.



Sizing Specifications

RotoPamic Air Cleaners

Heavy service includes off-highway trucks, motor graders, crawler tractors, scrapers, cranes and shovels. Extra heavy service includes such equipment as large scrapers, rock drills, rough terrain cranes and shovels, rock drilling and quarrying compressors, and full-tracked low speed tractors.These pre-cleaners provide maximum service life of the disposable Pamic filter element.

Positive Pressure Drain System

Positive pressure bleed systems can be used on all turbocharged engines and two-cycle Detroit Diesel turbocharged or naturally aspirated engines. They can also be used wherever a continuous source of compressed air (4 PSIG or greater) is available, such as the receiver tank on an air compressor.

Basic two stage kits include:

- Moisture Separator panel
- Pamic Filter Element
- Air Cleaner Housing with integral Pamic Filter Element

Positive Pressure System

- Pamic Filter Element
- Air Cleaner Housing with integral Pamic Filter Element

Positive Pressure Bleed System Plumbing Kit

(to be ordered separately)

Application	Ordering Number	Parts included
All engines where (except Detroit Diesel 2-cycle) where connection is taken from side of turbocharger	061999000	Check Valve for prcleaner dust pin.Turbocharger hose fitting. Hose clamps
For Detroit Diesel 2-cycle engines only, where connection is made to air box. Specify engine model & rpm	See Racor Installation Bulletin	Air box fitting. Special air box cover (when required). Hose clamps.

* Order 3/4" (19.1mm) high-temperature silicone hose separately.
Note: For positive pressure plumbing kit for double housings, see your Racor representative.

Basic Autopamic Kits

Ordering and Specification

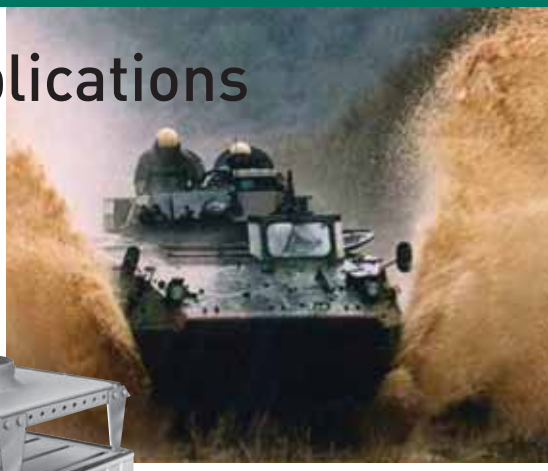
No of Tubes			Part Numbers			Application		Dimensions			
Total	Wide	High	Kit Number	Element Number	Recommended Outlet Nozzle O.D in mm (inches)	Flow Rate Range in m3/min (CFM)	Hp Range (KW)	Approx. Weight (kg)	(lbs)	Width in mm (inches)	Height in mm (inches)
9	3	3	062705001	012233003	76.2 (3)	4.2-5.7 (150-200)	56-75 (75-100)	15	32	218 (8.59)	218 (8.59)
12	3	4	062705002	012233004	76.2 (3)	4.9-7.1 (175-250)	60-93 (80-125)	17	37	218 (8.59)	277 (10.91)
24	4	6	062705008	012233007	101.6 (4)	9.9-12.7 (350-450)	130-168 (175-225)	28	62	277 (10.91)	394 (15.53)
32	4	8	062705010	012233008	127 (5)	12.7-18.4 (450-650)	168-242 (225-325)	32	71	277 (10.91)	512 (20.16)
40	5	8	062705011	012233009	127 (5)	16.7-22.6 (600-800)	223-298 (300-400)	38	84	335 (13.22)	512 (20.16)
48	6	8	062705012	012233010	152.4 (6)	19.8-26.9 (700-950)	261-354 (350-475)	42	93	394 (15.53)	512 (20.16)
64	8	8	062705013	012233011	152.4 (6)	26.9-36.2 (950-1280)	354-477 (475-640)	50	111	512 (20.16)	512 (20.16)
128*	8	16	059718000	012233011x2	152.4 (6)x2	53.8-72.5 (1900-2560)	522-954 (950-1280)	99	217	1059 (41.69)	512 (20.16)

Basic Rotopamic Positive Pressure Discharge Kits

* On special order only.

No of Tubes			Part Numbers			Application		Dimensions			
Total	Wide	High	Kit Number	Element Number	Recommended Outlet Nozzle O.D in mm (inches)	Flow Rate Range in m3/min (CFM)	Hp Range (KW)	Approx. Weight (kg)	(lbs)	Width in mm (inches)	Height in mm (inches)
24	4	6	062713003	012233007	101.6 (4)	5.5-11.3 (200-400)	75-149 (100-200)	27	59	277 (10.91)	394 (15.53)
32	4	8	062713007	012233008	127 (5)	11.3-15.6 (400-550)	149-205 (200-275)	32	70	277 (10.91)	512 (20.16)
40	5	8	062713009	012233009	127 (5)	15.6-19.1 (550-675)	205-242 (275-325)	37	82	335 (13.22)	512 (20.16)
48	6	8	062713011	012233010	152.4 (6)	19-22.6 (670-800)	242-298 (325-400)	42	92	394 (15.53)	512 (20.16)

Medium to Extra Heavy Duty Applications



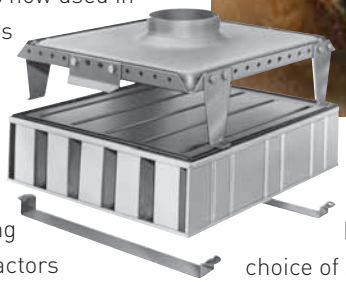
Features

Easy to Install
Available in three sizes, for either horizontal or vertical mounting. The integral mounting flange meets the needs of most "bolt-on" applications. A wide selection of flexible fittings, clamps and couplings to connect the air cleaner to the engine intake is also available.

Maintenance is Simple
No special skills or tools are required to change the filter element. Servicing is quick and clean. The long, effective life of the DynaCell reduces maintenance... a special advantage in remote installations.

Single Stage Air Cleaner

- Designed originally as a low profile under hood engine air cleaner for frontal air intake systems on-highway trucks, the DynaCell is now used in a variety of applications where a low profile and high efficiency are required.



- **Applications Include:** Off highway and logging trucks, agricultural tractors and motor graders, construction and mining equipment. Severe service applications include large scrapers, rock drills, cranes, shovels and low speed track type tractors.

- **Two and Three-Stage:** In addition to the primary DynaCell element, and your choice of SuperClone Pre-Cleaners, a third stage safety filter is also available. The pleated paper safety filter is housed in a deeper plenum pan than the two-stage model and provides the ultimate protection.

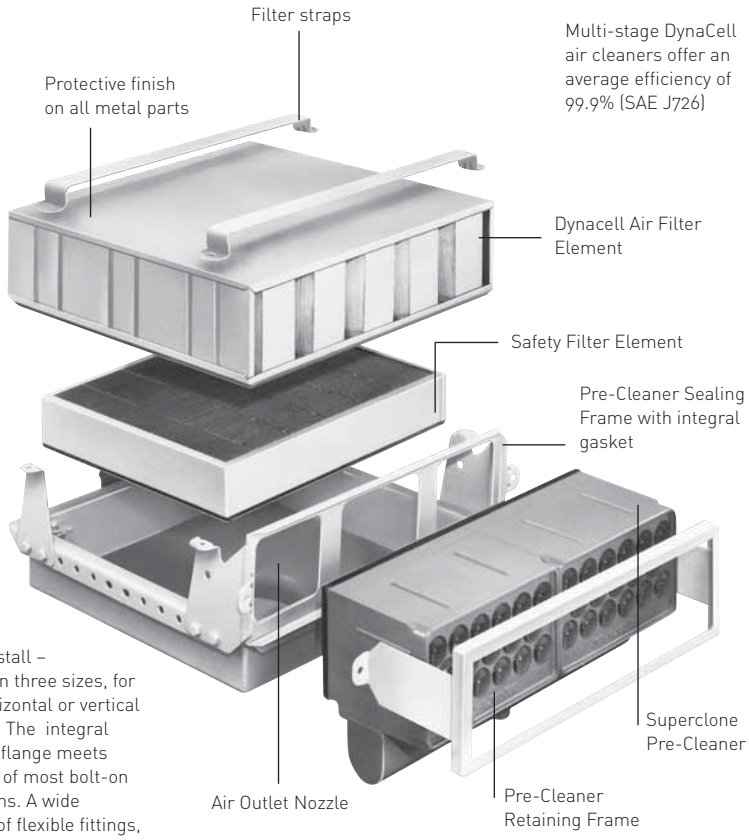
Easy to install
available in three sizes, for either horizontal or vertical mounting. The integral mounting flange meets the needs of most bolt-on applications. A wide selection of flexible fittings, clamps and couplings to connect the air cleaner to the engine intake is also available.

SuperClone Pre-Cleaner

For heavy and extra duty service, the SuperClone Pre-Cleaner is recommended. SuperClone removes most of the airborne dust prior to it reaching the DynaCell element, extending the systems useful service life.

Two models are available:
- Gravity discharge for heavy service
- Positive pressure aspirated

For applications requiring heavy service, exhaust aspirated or positive pressure aspirated versions are recommended.

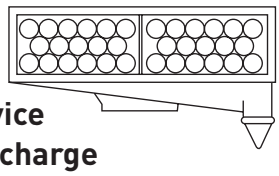


Easy to install – available in three sizes, for either horizontal or vertical mounting. The integral mounting flange meets the needs of most bolt-on applications. A wide selection of flexible fittings, clamps and couplings to connect the air cleaner to the engine intake is also available.

No special tools are required to change the filter element. Servicing is quick and clean.

Positive Pressure Bleed Systems Plumbing Kit for Turbocharged 4-Cycle Engines (Included with Positive Pressure SuperClones)

Application	Part No.	Parts included
All engines where connection is taken from pressure side of turbocharger	061999000 for T-512 & T-519 062215000 for T-528	Plumbing fittings. clamps and check valve. 3/4" high-temp silicone hose is not included

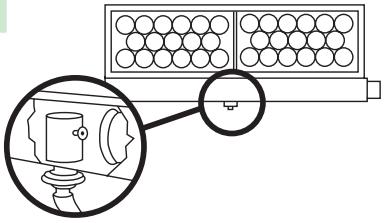


Heavy Service Gravity Discharge

The gravity discharge SuperClone is the easiest to install. No additional ducting or pressure lines are required. It removes up to 86% (SAE J726) of the intake air dust load.

Extra Heavy Service Positive Pressure Aspirated

The positive pressure Super Clone is designed for the heaviest dirt concentrations. Aspirator uses compressed air from engine air intake manifold, air box, or air compressor receiver tank.

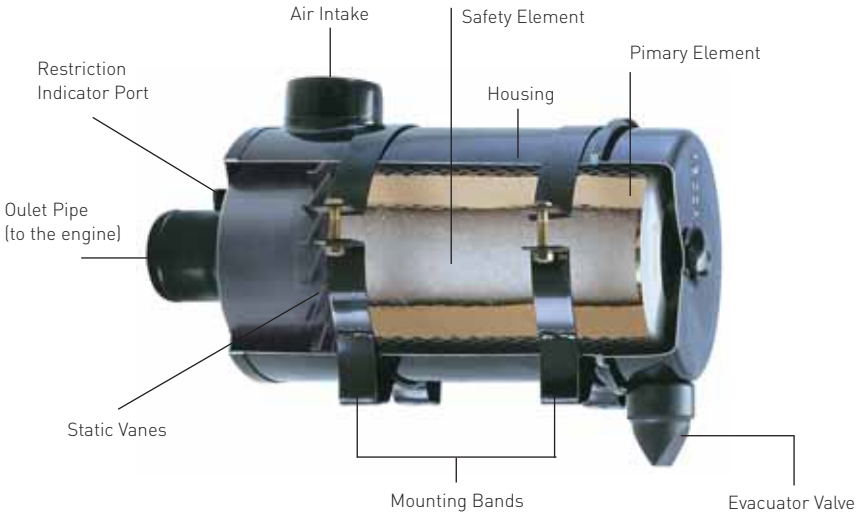


Air pressures from 4-100 psig are suitable for aspirator. Removes up to 94% (SAE J726) of the dirt entering the air cleaner.

Ordering and Specification - Basic Dynacell Kits

Basic Kit No.	Type	Orientation	Primary Element	Safety Element	Outlet in mm (inches)	Max flow in CFM (m3/min)	Width in mm (inches)	Height in mm (inches)	Weight on kg (lbs)
Standard Dynacell									
058447000		Horizontal		-	127 (5)	600 (17)	297 (11.69)	206 (8.1)	8.6 (19)
058447000	Series	Vertical		-	127 (5)	600 (17)	206 (8.1)	297 (11.69)	14 (30)
060039000		Vertical		060236000	127 (5)	550 (15.6)	241 (9.48)	297 (11.69)	14 (30)
060144000		Horizontal		-	152 (6)	1100 (31.1)	487 (19.19)	219 (8.64)	14 (30)
060040000	T-519	Horizontal	045800000	060237000	152 (6)	1050 (29.7)	487 (19.19)	280 (11.04)	14 (30)
060144000	Series	Vertical		-	152 (6)	1100 (31.1)	219 (8.64)	487 (19.19)	14 (30)
060140000		Vertical		060237000	152 (6)	1050 (29.7)	280 (11.04)	487 (19.19)	24 (53)
060146000		Horizontal		-	178 (7)	1600 (45.3)	729 (28.69)	219 (8.64)	14 (30)
060146000	Series	Vertical		-	178 (7)	1600 (45.3)	219 (8.64)	729 (28.69)	14 (30)
060147000		Vertical		060238000	178 (7)	1550 (43.9)	280 (11.04)	729 (28.69)	14 (30)
Gravity Discharge Dynacell									
066386002		Horizontal		-	127 (5)	425 (12)	297 (11.69)	286 (11.28)	
066386003	T-512	Horizontal	049261000	060236000	127 (5)	425 (12)	297 (11.69)	286 (11.28)	14 (30)
066401002	Series	Vertical		-	127 (5)	425 (12)	286 (11.28)	297 (11.69)	
066386005		Horizontal		-	152 (6)	850 (24)	487 (19.19)	284 (11.17)	14 (30)
066386006	T-519	Horizontal	045800000	060237000	152 (6)	850 (24)	487 (19.19)	284 (11.17)	14 (30)
066401005	Series	Vertical		-	152 (6)	850 (24)	284 (11.17)	487 (19.19)	14 (30)
066401006		Vertical		060237000	152 (6)	850 (24)	284 (11.17)	487 (19.19)	
066386008		Horizontal		-	178 (7)	1275 (36.1)	729 (28.69)	284 (11.17)	14 (30)
066386009	T-528	Horizontal	051800000	060238000	178 (7)	1275 (36.1)	729 (28.69)	284 (11.17)	
066430008	Series	Vertical		060238000	178 (7)	1275 (36.1)	284 (11.17)	729 (28.69)	14 (30)
Postive Pressure Discharge Dynacell									
066417002		Horizontal		-	127 (5)	640 (18.1)	297 (11.69)	206 (8.1)	
066417003	T-512	Horizontal	049261000	060236000	127 (5)	640 (18.1)	297 (11.69)	241 (9.48)	
066430002	Series	Vertical		-	127 (5)	640 (18.1)	206 (8.1)	297 (11.69)	
066430003		Vertical		060236000	127 (5)	640 (18.1)	241 (9.48)	297 (11.69)	
066417005		Horizontal		-	152 (6)	980 (27.7)	487 (19.19)	219 (8.64)	
066417006	T-519	Horizontal	045800000	060237000	152 (6)	980 (27.7)	487 (19.19)	280 (11.04)	
066430005	Series	Vertical		-	152 (6)	980 (27.7)	219 (8.64)	487 (19.19)	
066430006		Vertical		060237000	152 (6)	980 (27.7)	280 (11.04)	487 (19.19)	
066417008		Horizontal		-	178 (7)	1470 (41.6)	729 (28.69)	219 (8.64)	
066417009	T-528	Horizontal	051800000	060238000	178 (7)	1470 (41.6)	729 (28.69)	280 (11.04)	
066430009	Series	Vertical		060238000	178 (7)	1470 (41.6)	280 (11.04)	729 (28.69)	9 (20)

Medium Duty Standard Air Filters



Applications

Racor Standard Air Filters are designed to be connected to the air intake of the gasoline or diesel engine.

Applications include:

- Agricultural machinery
- Earth-moving equipment.
- Stationary engines; generator sets
- Trucks, buses & recreational vehicles
- Material handling equipment
- Snow removal equipment & street sweepers.

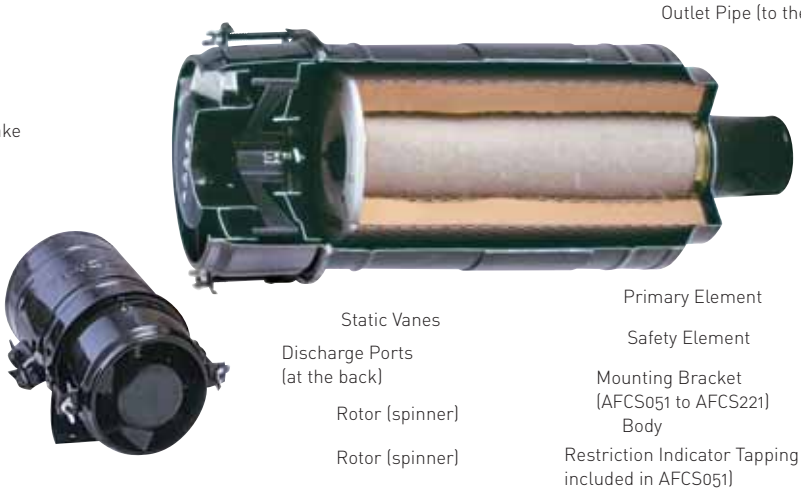
How they work

Air flows through static vanes (plastic or metal) which causes the air to spin. Centrifugal force separates the heaviest impurities (dust, dirt, insects and other debris) from the air stream. These contaminants are discharged automatically through an integral evacuator valve. Only purified air flows to the air filter elements (primary and safety stages of filtration).

Ordering and Specification

Model	Airflow Range m^3/min (CFM)	Horsepower Range	Weight (with filter elements)	Max Length	Max Diameter	Inlet Size	Outlet Size	Primary Element	Safety Element
AFSF4	1.5 to 4.5 m^3/min (53 to 159 CFM)	22 to 60 KW (30 to 80 HP)	3.80 kg (8.40 lbs)	385mm (15.15")	165mm (6.50")	63mm (2.5")	63mm (2.5")	AR6060	AS6121
AFSF6	4.5 to 6.0 m^3/min (159 to 212 CFM)	60 to 67 KW (80 to 90 HP)	3.80 kg (10.79 lbs)	425mm (16.73")	198mm (7.80")	76mm (3")	70mm (2.75")	AR6122	AS6123
AFSF8	6.0 to 8.0 m^3/min (212 to 282 CFM)	67 to 90 KW (90 to 120 HP)	3.80 kg (11.70 lbs)	445mm (17.52")	216mm (8.50")	76mm (3")	76mm (3")	AR6144	AS6180
AFSF12	8.0 to 12.0 m^3/min (282 to 423 CFM)	90 to 120 KW (120 to 160 HP)	3.80 kg (16.50 lbs)	478mm (18.82")	256mm (10.08")	102mm (4")	102mm (4")	AR6067	AS6159
AFSF15	12.0 to 15.0 m^3/min (423 to 529 CFM)	120 to 134 KW (160 to 180 HP)	3.80 kg (21.92 lbs)	480mm (18.90")	281mm (11.06")	102mm (4")	102mm (4")	AR234401	AS6182
AFSF18	15.0 to 18.0 m^3/min (529 to 635 CFM)	134 to 157 KW (180 to 210 HP)	3.80 kg (27.55 lbs)	548mm (21.57")	290mm (11.42")	114mm (4.5")	102mm (4")	AR6321	AS6320
AFSF20	18.0 to 20.0 m^3/min (635 to 706 CFM)	157 to 187 KW (210 to 250 HP)	3.80 kg (31.06 lbs)	528mm (20.79")	318mm (12.52")	133mm (5.25")	133mm (5.25")	AR6277	AS6316
AFSF21	20.0 to 21.0 m^3/min (706 to 741 CFM)	179 to 209 KW (240 to 280 HP)	3.80 kg (33.90 lbs)	608mm (23.94")	318mm (12.52")	133mm (5.25")	130mm (5.12")	AR246501	AS6220
AFSF310	20.0 to 21.0 m^3/min (741 to 988 CFM)	209 to 239 KW (280 to 320 HP)	3.80 kg (40.00 lbs)	591mm (23.27")	392mm (15.43")	152mm (6")	152mm (6")	AR6154	AS6221
AFSF430	28.0 to 43.0 m^3/min (988 to 1517 CFM)	239 to 335 KW (320 to 450 HP)	3.80 kg (78.65 lbs)	723mm (28.46")	460mm (18.11")	152mm (6")	152mm (6")	AR6324	AS6323

Heavy Duty Combination Dynamic Pre-Cleaners / Filters



Applications

Racor Combination Dynamic Pre-Cleaner / Air Filters are specifically designed to be connected to the air intake of gasoline and diesel engines. The advantages of the systems include their compact size and ease of installation. The three-stage air filtration systems are designed with only one connection to the engine.

Applications include:

- Agricultural machinery
- Earth-moving equipment.
- Stationary engines; generator sets
- Trucks, pick-ups, off road vehicles
- Material handling equipment
- Snow removal equipment & street sweepers.

Features and Benefits

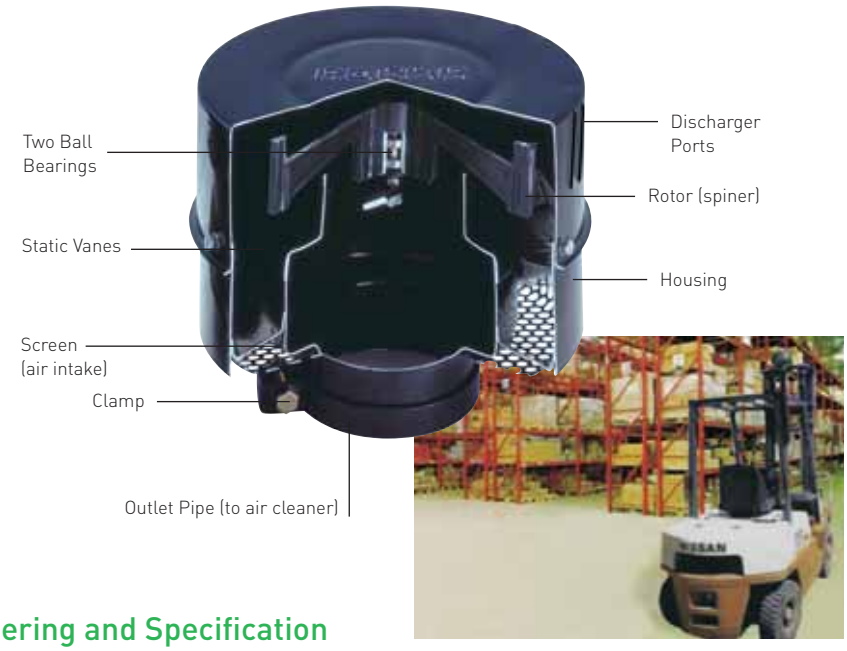
- Pre-Cleaners remove up to 90% of impurities from intake air before the air enters the filter elements.
- Extends engine air filter life.
- Reduces down time.
- Prolongs engine and turbocharger life.
- Saves on fuel costs.
- Safety element is standard in most models.

Ordering and Specification

Model	Airflow Range m^3/min (CFM)	Horsepower Range	Weight (with filter elements)	Max Length	Max Diameter	Inlet Size	Outlet Size	Primary Element	Safety Element
AFCS051	1.5 to 3.5 m^3/min (53 to 124 CFM)	22 to 52 KW (30 to 70 HP)	3.90 kg (8.60 lbs)	382 mm (15.04")	188 mm (7.40")	–	63 mm (2.5")	AR6322	–
AFCS071	3.5 to 4.5 m^3/min (124 to 159 CFM)	37 to 52 KW (50 to 70 HP)	4.70 kg (10.35 lbs)	480 mm (18.90")	188 mm (7.40")	–	63 mm (2.5")	AR6060	AS6121
AFCS081	4.5 to 6.0 m^3/min (159 to 212 CFM)	52 to 60 KW (70 to 80 HP)	5.75 kg (12.70 lbs)	520 mm (20.47")	204 mm (8.03")	–	70 mm (2.75")	AR6122	AS6123
AFCS121	6.0 to 8.0 m^3/min (212 to 282 CFM)	60 to 82 KW (80 to 110 HP)	7.50 kg (16.50 lbs)	564 mm (22.20")	230 mm (9.05")	–	76 mm (3")	AR6144	AS6180
AFCS181	8.0 to 12.0 m^3/min (282 to 423 CFM)	82 to 112 KW (110 to 150 HP)	9.20 kg (20.30 lbs)	616 mm (24.25")	253 mm (9.96")	–	102 mm (4")	AR6067	AS6159
AFCS221	12.0 to 15.0m^3/min (423 to 529 CFM)	112 to 135 KW (150 to 180 HP)	11.00 kg (24.20 lbs)	647 mm (25.47")	288 mm (11.34")	–	102 mm (4")	AR234401	AS6182
AFCS251	15.0 to 20.0m^3/min (529 to 706 CFM)	134 to 179 KW (180 to 240 HP)	13.60 kg (30.00 lbs)	708 mm (27.87")	337 mm (13.27")	–	133 mm (5.25")	AR6277	AS6316
AFCS261	20.0 to 21.0m^3/min (706 to 741 CFM)	149 to 194 KW (200 to 260 HP)	14.50 kg (31.90 lbs)	780 mm (30.71")	337 mm (13.27")	–	130 mm (5.12")	AR246501	AS6220

Heavy Duty On-Highway Pre-Cleaners

For Mobile Equipment Applications



Applications

Racor Engine Air Pre-Cleaners are designed to be mounted on or connected to the air filter intake of a gasoline or diesel engine air cleaner.

Applications include:

- All fast-moving mobile equipment such as trucks, buses and recreational vehicles.

Features and Benefits

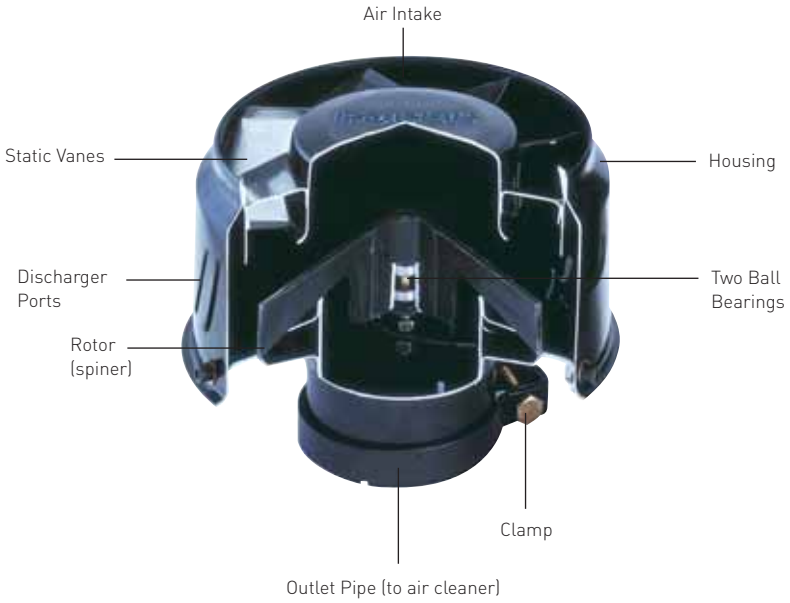
- Removes up to 80% of impurities from intake air before the air enters the filter elements.
- Compact, low-profile design.
- The bottom-intake air entry design eliminates the opportunity for water intrusion during high speed and stationary operation.
- Easy to install. Three plastic outlet reduction sleeves are provided with each assembly.

Ordering and Specification

Model	Airflow Range	Horsepower Range	Weight	Max Length	Max Diameter	Outlet Size
AFHP31	1.5 to 3.5 m^3/min (53 to 124 CFM)	22 to 45 KW (30 to 60 HP)	1.10 kg (2.40 lbs)	154 mm (6.06")	178 mm (7.00")	76-70-63 mm (3-2.75-2.5")
AFHP41	3.5 to 7.0 m^3/min (124 to 247 CFM)	45 to 90 KW (60 to 120 HP)	1.55 kg (3.40 lbs)	178 mm (7.00")	216 mm (8.50")	82-76-70-63 mm (3.25-3-2.75-2.5")
AFHP42	3.5 to 7.0 m^3/min (124 to 247 CFM)	45 to 90 KW (60 to 120 HP)	1.60 kg (3.50 lbs)	178 mm (7.00")	216 mm (8.50")	102-95-89-82mm (4-3.75-3.5-3.25")
AFHP81	7.0 to 11.0 m^3/min (247 to 388 CFM)	90 to 120 KW (120 to 160 HP)	1.90 kg (4.20 lbs)	205 mm (8.07")	243 mm (9.58")	82-76-70-63 mm (3.25-3-2.75-2.5")
AFHP82	7.0 to 11.0 m^3/min (247 to 388 CFM)	90 to 120 KW (120 to 160 HP)	1.95 kg (4.30 lbs)	205 mm (8.07")	243 mm (9.58")	102-95-89-82 mm (4-3.75-3.5-3.25")
AFHP83	7.0 to 11.0 m^3/min (247 to 388 CFM)	90 to 120 KW (120 to 160 HP)	1.95 kg (4.40 lbs)	205 mm (8.07")	243 mm (9.58")	102-95-89-82 mm (4.5-4.33-4-3.75")
AFHP91	7.0 to 11.0 m^3/min (388 to 530 CFM)	90 to 120 KW (160 to 220 HP)	2.00 kg (5.20 lbs)	205 mm (8.15")	243 mm (11.02")	114-110-102-95 mm (4.5-4.33-4-3.75")
AFHP92	11.0 to 15.0 m^3/min (388 to 530 CFM)	165 to 225 KW (220 to 300 HP)	2.50 kg (5.50 lbs)	207 mm (8.15")	280 mm (11.02")	133-127-121-114 mm (5.25-5-4.75-4.5")
AFHP111	15.0 to 22.0 m^3/min (530 to 776 CFM)	165 to 225 KW (220 to 300 HP)	2.95 kg (6.50 lbs)	200 mm (7.87")	310 mm (12.20")	133-127-121-114 mm (5.25-5-4.75-4.5")
AFHP112	15.0 to 22.0 m^3/min (530 to 776 CFM)	165 to 225 KW (220 to 300 HP)	3.00 kg (6.60 lbs)	200 mm (7.87")	310 mm (12.20")	152-140-133-127 mm (6-5.5-5.25-5")
AFHP211	21.0 to 30.0 m^3/min (776 to 1059 CFM)	225 to 300 KW (300 to 400 HP)	3.80 kg (8.40 lbs)	232 mm (9.13")	360 mm (14.17")	152-140-133-127 m (6-5.5-5.25-5")
AFHP212	21.0 to 30.0 m^3/min (776 to 1059 CFM)	225 to 300 KW (300 to 400 HP)	4.00 kg (8.80 lbs)	232 mm (9.13")	360 mm (14.17")	178-171-165-159 mm (7-6.75-6.5-6.25")

Heavy Duty On-Highway Pre-Cleaners

For Under Hood Applications



How they work

Racor Under Hood Engine Air Pre-Cleaners can be remote mounted or attached directly to the air cleaner eliminating the need for an external air intake.

- No exterior vehicle modification for intake air.
- High air flow, low differential design.

Ordering and Specification

Model	Airflow Range	Horsepower Range	Weight	Max Length	Max Diameter	Outlet Size
AFUP006	1.5 to 4.0 m3/min (53 to 141 CFM)	22 to 45 KW (30 to 60 HP)	0.80 kg (1.75 lbs)	130 mm (5.12")	142 mm (5.59")	63 mm (2.5" (I.D.))
AFUP006E	1.5 to 4.0 m3/min (53 to 141 CFM)	22 to 45 KW (30 to 60 HP)	1.10 kg (2.40 lbs)	145 mm (5.71")	142 mm (5.59")	63 mm (2.5" (O.D.))
AFUP007	4.0 to 5.0 m3/min (141 to 176 CFM)	45 to 52 KW (60 to 70 HP)	1.30 kg (2.86 lbs)	157 mm (6.18")	180 mm (7.09")	6-70-63 mm (3-2.75-2.5" (I.D.))
AFUP007E	4.0 to 5.0 m3/min (141 to 176 CFM)	45 to 52 KW (60 to 70 HP)	1.40 kg (3.08 lbs)	168 mm (6.61")	180 mm (7.09")	76 mm (3" (O.D.))
AFUP021	5.0 to 8.0 m3/min (176 to 282 CFM)	52 to 75 KW (70 to 100 HP)	1.60 kg (3.52 lbs)	148 mm (5.83")	200 mm (7.87")	82-76-70-63 mm (3.25-3-2.75-2.5" (I.D.))
AFUP021E	5.0 to 8.0 m3/min (176 to 282 CFM)	52 to 75 KW (70 to 100 HP)	1.85 kg (4.07 lbs)	170 mm (6.69")	200 mm (7.87")	82 mm (3.25" (O.D.))
AFUP041	8.0 to 12.0 m3/min (282 to 423 CFM)	75 to 104 KW (100 to 140 HP)	1.95 kg (4.30 lbs)	186 mm (7.32")	228 mm (8.98")	102-95-89-82 mm (4-3.75-3.5-3.25"(I.D.))
AFUP041E	8.0 to 12.0 m3/min (282 to 423 CFM)	75 to 104 KW (100 to 140 HP)	2.20 kg (4.85 lbs)	187 mm (7.36")	228 mm (8.98")	102 mm (4" (O.D.))
AFUP061	12.0 to 18.0 m3/min (423 to 635 CFM)	104 to 150 KW (140 to 200 HP)	2.25 kg (4.95 lbs)	189 mm (7.44")	240 m) (9.45")	133-127-121-114 mm (5.25-5-4.75-4.5"(I.D.))
AFUP061E	12.0 to 18.0 m3/min (423 to 635 CFM)	104 to 150 KW (140 to 200 HP)	2.60 kg (5.70 lbs)	202 mm (7.95")	240 mm (9.45")	133 mm (5.25" (O.D.))
AFUP091	18.0 to 21.0 m3/min (635 to 741 CFM)	149 to 224 KW (200 to 300 HP)	3.00 kg (6.60 lbs)	204 mm (8.03")	280 mm (11.02")	133-127-121-114 mm (5.25-5-4.75-4.5"(I.D.))
AFUP091E	18.0 to 21.0 m3/min (635 to 741 CFM)	149 to 224 KW (200 to 300 HP)	3.50 kg (7.71 lbs)	228 mm (8.98")	280 mm (11.02")	133 mm (5.25" (O.D.))
AFUP131	21.0 to 28.0 m3/min (741 to 988 CFM)	224 to 261 KW (300 to 350 HP)	3.30 kg (7.25 lbs)	256 mm (10.08")	331 mm (13.03")	152-140-133-127 mm (6-5.5-5.25-5"-(I.D.))

Heavy Duty Off-Highway and Industrial Air Pre-Cleaners

For Agriculture, Construction and Stationary Applications

Applications

Racor Engine Air Pre-Cleaners are designed to be mounted on or connected to the air filter intake of a gasoline or diesel engine air cleaner.

Their applications include all slow-moving and industrial equipment such as agricultural machinery; earth moving, construction and mining equipment; pumping plants; generator sets; material handling equipment; snow removal equipment and street sweepers.

Models
AFAP414 to AFAP401

How they work

Racor Engine Air Pre-Cleaners are usually installed in place of the rain cap, dust bowl, or aspirated pre-cleaner (exhaust system). In some applications, they can be mounted directly to the air cleaner.

Air enters the system through a pre-screen that removes large debris. It then flows through static vanes causing the air to spin. As the air spins, centrifugal force separates dust, dirt, insects, rain and snow from the air stream. The swirling air drives a high velocity rotor that acts as a blower evacuating contaminants through special discharge ports at the bottom or in the side of the unit. Only purified air flows to the air filter elements.

Ordering and Specification

Model	Airflow Range	Horsepower Range	Weight	Max Length	Max Diameter	Outlet Size
AFAP083	1.5 to 3.5 m3/min (53 to 124 CFM)	22 to 45 KW (30 to 60 HP)	1.55 kg (3.40 lbs)	195 mm (7.68")	188 mm (7.40")	76-70-63 mm (3-2.75-2.5")
AFAP414	3.5 to 7.0 m3/min (124 to 247 CFM)	45 to 90 KW (60 to 120 HP)	2.65 kg (5.80 lbs)	325 mm (12.80")	221 mm (8.70")	82-76-70-63 mm (3.25-3-2.75-2.5")
AFAP415	3.5 to 7.0 m3/min (124 to 247 CFM)	45 to 90 KW (60 to 120 HP)	2.85 kg (6.30 lbs)	348 mm (13.70")	221 mm (8.70")	102-95-89-82 mm (4-3.75-3.5-3.25")
AFAP818	7.0 to 11.0 m3/min (247 to 388 CFM)	90 to 120 KW (120 to 160 HP)	3.50 kg (7.70 lbs)	342 mm (13.46")	271 mm (10.67")	82-76-70-63 mm (3.25-3-2.75-2.5")
AFAP819	7.0 to 11.0 m3/min (247 to 388 CFM)	90 to 120 KW (120 to 160 HP)	3.55 kg (7.80 lbs)	355 mm (13.98")	271 mm (10.67")	102-95-89-82 mm (4-3.75-3.5-3.25")
AFAP820	7.0 to 11.0 m3/min (247 to 388 CFM)	90 to 120 KW (120 to 160 HP)	3.70 kg (8.15 lbs)	352 mm (13.86")	271 mm (10.67")	114-110-102-95 mm (4.5-4.33-4-3.75")
AFAP919	11.0 to 15.0 m3/min (388 to 530 CFM)	120 to 165 KW (160 to 220 HP)	4.40 kg (9.70 lbs)	362 mm (14.25")	316 mm (12.44")	114-110-102-95 mm (4.5-4.33-4-3.75")
AFAP920	11.0 to 15.0 m3/min (388 to 530 CFM)	120 to 165 KW (160 to 220 HP)	4.60 kg (10.10 lbs)	371 mm (14.60")	316 mm (12.44")	133-127-121-114 mm (5.25-5-4.75-4.5")
AFAP183	15.0 to 22.0 m3/min (530 to 776 CFM)	165 to 225 KW (220 to 300 HP)	5.75 kg (12.70 lbs)	410 mm (16.14")	352 mm (13.86")	133-127-121-114 mm (5.25-5-4.75-4.5")
AFAP184	15.0 to 22.0 m3/min (530 to 776 CFM)	165 to 225 K (220 to 300 HP)	5.80 kg (12.80 lbs)	405 mm (15.94")	352 mm (13.86")	152-140-133-127 mm (6-5.5-5.25-5")
AFAP400	22.0 to 30.0 m3/min (776 to 1059 CFM)	225 to 300 KW (300 to 400 HP)	7.50 kg (16.50 lbs)	470 mm (18.50")	421 mm (16.57")	152-140-133-127 mm (6-5.50-5.25-5")
AFAP401	22.0 to 30.0 m3/min (776 to 1059 CFM)	225 to 300 KW (300 to 400 HP)	7.30 kg (16.10 lbs)	460 mm (18.11")	421 mm (16.57")	178-171-165-159 mm (7-6.75-6.5-6.25")

Filter Service Indicator

"Filter Minder" Service Indicator is a precision Airflow Restriction Gauge designed to take the guesswork out of air cleaner element replacement. Its operation is simple and virtually foolproof.

As dirt captured by the filter cartridge gradually builds up, the system pressure drop increases and is indicated by the Filter Minder on an easy-to-read scale.

The indicator locks up at the point of maximum restriction so readings can be taken with or without the engine running. When the desired change-out point is reached and thefilter cartridge is easily reset by simply pushing the button at the bottom of the unit.

This indicator works equally well on both gasoline and diesel equipment. The Service indicator lets you know exactly when to replace filter elements. It reduces unnecessary labor and element costs by avoiding premature replacement. It permits you to maximize air filter element life.

Economical – Saving one filter element change-out can more that cover the cost of the Service Indicator. It's a small price for a potentially large gain year after year.

Standard Filter Monitor Part No.s

Part No.	Range (in. water vac.)	Description
400033015[A]	8-15	Direct Mount
400033020[A]	8-20	Direct Mount
400033025[A]	8-25	Direct Mount
014440001[A]	8-25	Direct Mount w/90º fitting
072604000[B]	4-25	Remote Mount
076248001[A]	8-25	Dash Mount

[A] Unit standard with a 1/8"-27 NPT straight fitting.
[B] Unit standard with a 90° coupling and 10' hose

Filter Monitor / Single Latching Position

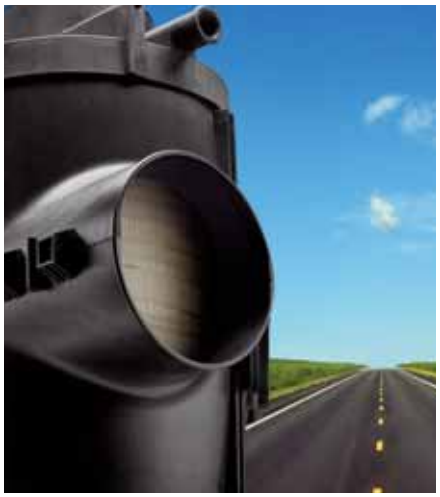
Part Number	Range (in.water vac.)
500198020	20
500198025	25

Accessories

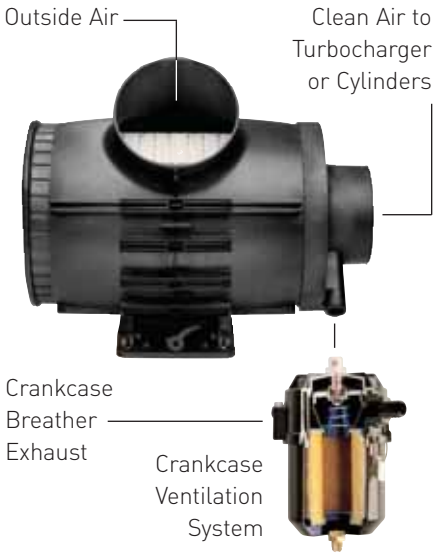
Part No.	Description
400034000	90" fitting (Adapts to straight fitting)

ECO III is a Quantum Leap in Air Filtration System Design

The ECO III is the result of a focused, collaborative effort between Racor engineering and our customers. On-highway, real-world testing and laboratory certification has resulted in the advanced ECO III product line. State-of-the-art materials and design features result in installation flexibility, superior performance, ease of service and unmatched customer satisfaction.



ECO III in a typical Closed Air Filtration System Configuration



Smaller. And Better.

ECO III is designed for 250-400 horsepower engines for over-the-road vehicles, including buses and speciality applications. Because ECO III delivers high efficiency in a small overall package design, the air filtration system can be located closer to turbochargers for increased performance. Furthermore, the smaller unit size frees valuable space in the engine compartment.

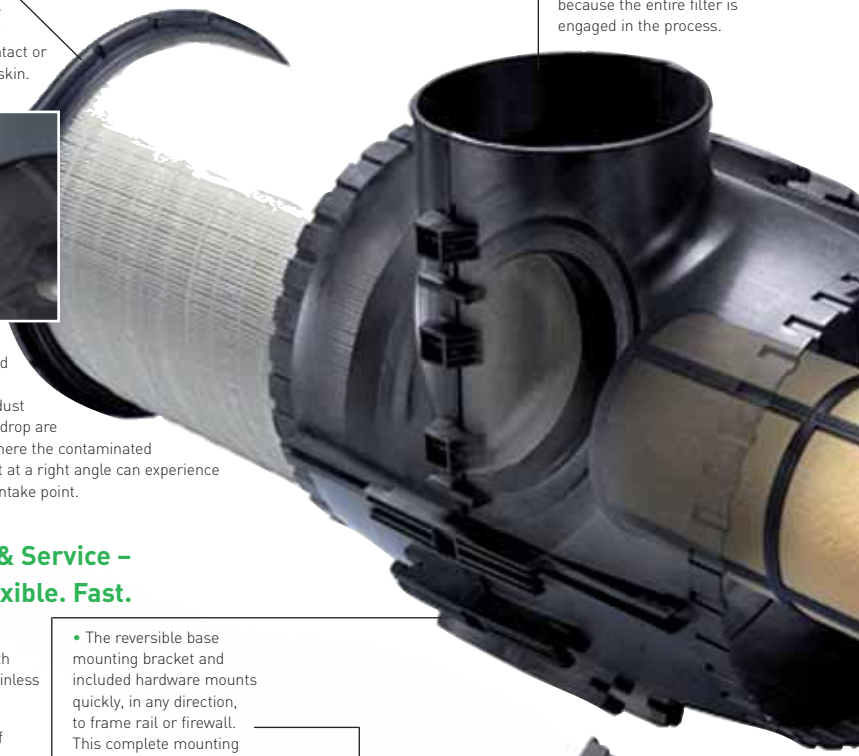
The easiest to specify, easiest to install, easiest to service air filter ever.

With ECO III Racor engineers have not only revolutionized the performance of air filtration, but also how the unit is installed and serviced. It's a mounting system invented for flexibility and convenience. The reversible base mounting bracket and included hardware mounts quickly, in any direction to frame rail or firewall. This complete mounting system eliminates the need for custom made, field-engineered and installed brackets – a significant saving of time and money.

The solid injection moulded glass-filled nylon polymer housing is corrosion-free, a durable construction that increases the temperature operation range to 250°C. The rugged assembly provides heavy duty structural strength proven to dependably withstand severe vibration.

A key feature of the ECO III housing is the tangential orientation of the 152mm inlet, which directs air flow evenly around the element. Element life is increased because the entire filter is engaged in the process.

To simplify element changeouts, two moulded handles, and an extended edge lip let hands firmly grasp and remove the integral end pan filter element... with no contact or contamination to the skin.



Because contaminated airflow is dispersed around the element, dust loading and pressure drop are improved. Systems where the contaminated airflow enters the unit at a right angle can experience loading at the single intake point.

Installation & Service – no tools. Flexible. Fast.

- The entire ECO III system is serviced with four quick release stainless perimeter clamps.
- ECO III is a model of flexibility.

The housing can be rotated 180° on the base. The outlet port is field reversible, and the orientation of the inlet port is adjustable in 20° increments.

- The reversible base mounting bracket and included hardware mounts quickly, in any direction, to frame rail or firewall. This complete mounting system eliminates the need for custom made, field engineered and installed brackets – a significant saving of time and money.
- "Quick Key", integral to the mounting base, securely locks the ECO III housing after the filtration unit has been precisely positioned.

4 levels of protection mean Eco III is Sealed for Maximum Engine Protection

The introduction of contamination during operation and at service time is of course a significant maintenance issue. ECO III provides four progressive levels of sealing.

A continuous ring seal (if a safety element is employed) is provided at the interface between the primary and safety element.

A sealing surface allows removal of the safety filter and wipes and captures dirt on the surface as it is removed.

Interior seal adds a second level of protection.

This new ECO III filter element is computer design optimized to provide maximum efficiency at lowest possible long term cost per mile.

An external radial seal rings the outlet of the filter housing to prevent contamination from escaping into the engine.

In severe duty, or when an extra measure of protection is desired, Racor provides a secondary, or safety filter. Its inverted cone design adds surface area helping to reduce pressure drop significantly without affecting flow. In addition to adding insurance in the unlikely event of a primary element failure, the safety filter remains in place during primary element service, further reducing the opportunity for contaminants to reach the turbocharger and engine components.

ECO III media is sealed with adhesive urethane to the end cap which eliminates the chance of contaminants leaking during operation or service.

Simple, clean, tool-less service was a design imperative, and a major ECO III benefit. Simple snap clamps secure the housing and integrated filter element components.

At both ends of the housing, keyed channels lock the element outlet component securely into place – to prevent element misalignment and rotation.

The standard, integral CCVTM port enables direct plumbing of a Closed Crankcase Ventilation exhaust line into the ECO III – creating an entirely closed, environmentally sound air system. By 2007 stringent legislation will mandate additional emission reductions.

Drain outlets are provided at both ends of the unit to allow channeled water to drain from the unit.

For ease of installation, both the CCV and Restriction Indicator Ports can be rotated 360° in 10° increments.

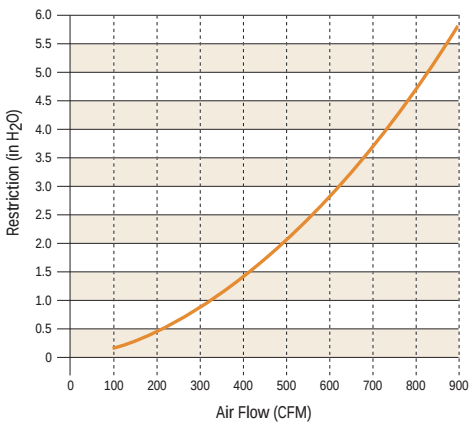
The ECO III features an enlarged 152mm radiused outlet to further reduce overall system restriction. This leak-free outlet port can be positioned on either end of the ECO III housing to simplify installation.

A secondary filter, or safety filter, can be specified for severe service operating conditions. See next page for additional details.

Standard Restriction Indication Port.

ECO III is Patent Pending

ECO III Pressure Drop



Closed Crank Case Ventilation Systems

The problem – open and unfiltered engine crankcase breathers, allow oil and soot ladened aerosol mist to enter the atmosphere from the crankcase.

Environmental concerns and EPA and European legislation bans the emission of open and untreated crankcase gases into the atmosphere. To reduce total engine emissions, it is becoming necessary to close the crankcase breather system, by routing these gases back into the air intake system.

Crankcase blowby is produced when combustion gases under high pressure are blown past the piston rings into the crankcase. As these blow by gases pass though the crankcase, they become contaminated with oil mist.

Racor's crankcase ventilation system removes these contaminations. The exhaust can then be allowed to be vented in the atmosphere.

For applications requiring more stringent emissions requirements, a closed crankcase filter is recommended.

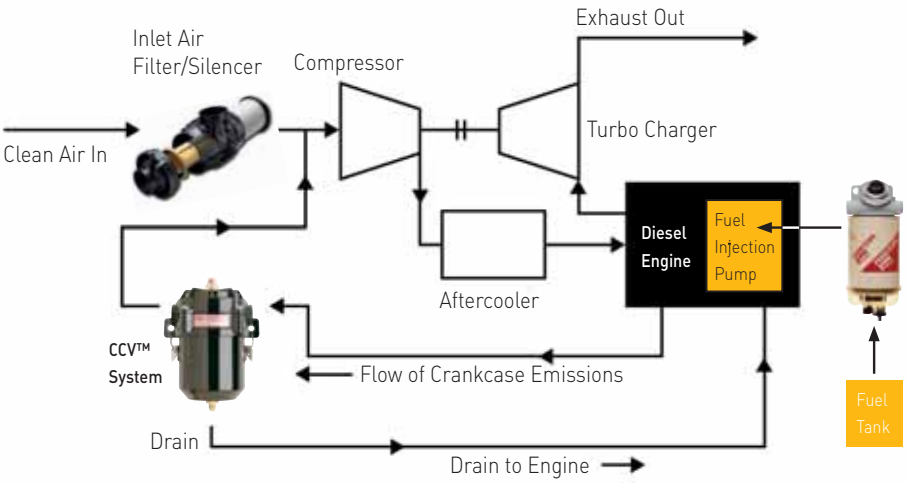
In this application, the exhaust from the crankcase filter is routed to the inlet side of the turbo. A regulator in the crankcase filter controls the vacuum in the crankcase to ensure proper operation.

Pictures below:
(bottom right) Cummins QSM11 marine engine with CCV cutaway.
(below) Caterpillar 3196 marine engine with Racor CCV/AF System.

- In closed environments like generator set 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 gasses,clogging air filter systems and damaging turbo-charger 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.

A modern diesel engine schematic

A schematic indicating air intake filtration, crankcase ventilation and water separation and fuel filtration in a modern diesel engine.



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

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

High efficiency oil separation to 0.3µ (microns)

Left or right hand inlet/outlet options

Durable glass-filled nylon components

Stainless steel latches for tool-less element change

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

Extended filter service interval from the Vaporbloc™ element

Steel with epoxy powder coating

Maximum continuous operating temperature, -40°F to +240°F (-40˚C to 116˚C)

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

Racor CCV™ Systems

In a robust, compact package, the patented Racor CCV closed crankcase ventilation filter systems provide superior oil coalescence and crankcase pressure control under the most severe conditions.

The only routine maintenance required for the Racor Crankcase Ventilation Filter System is filter replacement. Typical service life of the high performance filter in diesel applications is 750 hours. Some variations in service life occur depending on load profile, engine wear condition, flow and aerosol mass concentration of crankcase emissions, and soot concentration.

How to Select the Racor CCV Assembly: Racor CCV application is determined by crankcase flow in CFM. CFM on new engines is low but as the engine wears on, the CFM increases. Select the correct Racor CCV model by dividing the engine horsepower output by 40.

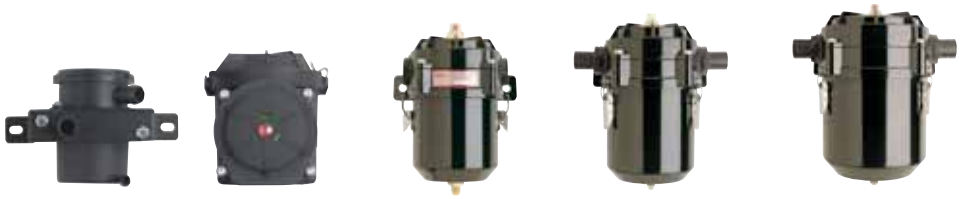
Single CCV units are designed to handle various crankcase flow rates up to 40 CFM. Traditionally, the crankcase flow rate can be calculated as follows: Rated horsepower ÷ 40 = cubic feet per minute (CFM). This formula can only be used as a guide since recent improvements in piston design have produced engines with higher horsepower and lower blow-by flow rates. The blow-by flow rate of a worn engine, at time of overhaul, is generally double the flow rate when the engine is new. The flow rate of a worn engine is factored into the formula. Note: Specify left or right hand inlet when ordering.

Example:

CAT 3116-260HP / 40
= 6.5 CFM, select CCV4500

CAT 3406-525HP / 40
= 13.13 CFM, select CCV6000

Closed Crank Case Ventilation Systems



	CCV1500	CCV3500	CCV4500	CCV6000	CCV8000
Height	130mm / 5.1"	178mm / 7.0"	235.0mm / 9.25"	304.8mm / 12.00"	352.6mm / 13.88"
Max. opening width (incl.clamps & brackets	208mm / 8.2"	178mm / 7.0"	190.5mm / 7.50"	286.8mm / 11.25"	336.6mm / 13.25"
Depth	142mm / 5.6"	160mm / 6.3"	142.2mm / 5.60"	185.4mm / 7.30"	236.2mm / 9.30"
Weight	.68 kg / 1.5 lbs	1.0 kg / 2.3 lbs	1.48 kg / 3.26 lbs	2.28 kg / 5.01 lbs	3.96 kg / 8.72 lbs
Filter Removal Clearance	152mm/ 6.0"	117mm / 4.6"	57.2mm / 2.25"	101.6mm/ 4.00"	127.0mm / 5.00"
Replacement element/media density/low	CCV 55365-04	N/A	N/A	N/A	N/A
Replacement element/media density/medium	N/A	CCV 55304-06	CCV 55248-06	CCV 55274-06	CCV 55222-06
Replacement element/media density/high	N/A	CCV 55304-08	CCV 55248-08	CCV 55274-08	CCV 55222-08
Housing Material	Glass-filled nylon and black powder epoxy coated steel bracket	Glass-filled nylon components.	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.
Inlet & outlet thread size	3/4" hose	3/4" hose	1 3/16" - 12 STOR	1 5/8" - 12 STOR	1 7/8" - 12 STOR
Max. cubic feet per minute	6.0" / 152 mm	84 lpm / 3.0"cfm	283 lpm / 10cfm	566 lpm / 20cfm	1132 lpm / 40cfm
Crankcase pressure regulator	Vacuum limiting valve	Integral	Integral	Integral	Integral
Bypass/change indicator	N/A	Integral	Integral or Remote	Integral or Remote	Integral or Remote
Engine block check valve return fitting	N/A	1/4" NPT	1/4" NPT	1/4" NPT	3/8" NPT
Swivel Fitting (Qty.)	N/A	# 6 JIC (2pcs.)	# 6 JIC (2pcs.)	# 6 JIC (2pcs.)	# 8 JIC (2pcs.)
Oil drain hose I.D.	N/A	.375"	.375"	.375"	.5"

Additional details are available in technical manual #55021.

* Units can be manifolded to handle higher flow rates.

Crankvent CV820 and CV1000 Systems trap crankcase blow-by and recycle engine oil through a high performance, open-cell foam filter. They help to decrease costs for maintaining air filters and keeping engine rooms clean. These units are typically used as an "open" system for non-turbocharged engines.

Part No.	CV820	CV1000[2]
Diameter	152mm/ 6.00"	207mm / 8.14"
Height	192mm / 7.55"	215mm / 8.48"
Weight	0.9 kg / 2.0 lbs	1.4 kg / 3.0 lbs
Filter Removal Clearance	102mm / 4.00"	102mm / 4.00"
Housing Material	Anodized aluminum All 18-8 stainless hardware	Anodized aluminum All 18-8 stainless hardware
Inlet Size	1" Female NPT	1-1/4" Female NPT
Outlet Size	1" Female NPT	1-1/4" Female NPT
Horsepower Range	Up to 350 HP (75-260 KW)[1]	350-600 HP (260-450 KW) [1]
Max. Cubic Feet per Minute	283 lpm / 10 cfm	425 lpm / 15 cfm
Service Kit	CV 820 SK	CV 1000 SK

For use on naturally aspirated engines. (1) Use of two or more filters per engine allows higher flow.
(2) The Crankvent® CV1000 must be used in two cycle engines with air box drain applications. Additional details are available in technical manual #7503 or please consult Racor.

Open System Crankcase Filtration

Marine Air Filter / Silencers

- Reduces noise up to 10 dba
- Can integrate Racor CCV systems
- Corrosion resistant
- Cleanable air filter
- No tools needed for serving
- Compact design l panels can cause hazardous conditions, down time and expensive maintenance.

Marine Air Filter Assembly

In order to determine the correct marine air filter application, you will need to know the marine air filter rating (AFR). You will need to provide the hose connection to turbo. Choose the correct marine air filter application per the following guideline:

Verify that the marine air filter dimensions will fit into your engine room.

4 cycle engines: AFR = HP x 2.0
2 cycle engines: AFR = HP x 2.5

Note:
If AFR is close to maximum capacity of the marine air filter as listed below, use the next size larger.

Example:

DDC 12V92TA DDEC (2 cycle – twin turbo):
826 hp x 2.5 = 1032.5 AFR per turbo =
(2) AF M501012

1110 hp x 2.5 = 1387.5 AFR per turbo =
(2) AF M601212

CAT 3196 (4 cycle - twin turbo):
660 hp x 2.0 = 1320.0 AFR =
(1) AF M601212

In addition, note the dimensions of the marine air filter outlets and the Racor CCV connector barb outside diameter from the chart in the Marine Air Filter Kit installation Section to ensure the correct installation for your engine. However, the marine air filters typically correspond with the following CCV Models (see chart on right).

The engine crankcase breather is connected to the inlet of the Racor CCV assembly. The CCV outlet is connected to the engine's combustion air inlet via an air intake connector where filtered blow-by gas is recycled through the combustion process. Oil collected in the CCV sump is returned to the crankcase through a hose and a drain check valve.

The Racor marine air filter/silencer removes contaminants introduced into the air from both outside and inside the vessel. Sand, salt, carpet fibers and other contaminants are trapped in the oil-impregnated filter media. Turbo noise is reduced by the unique design of the air filter/silencer housing. An integral hose connection on the housing routes the clean blow-by from the CCV back into the engine.

Marine Air Filter	CCV Model
AF M408512	CCV4500
AF M501012	CCV6000
AF M601212	CCV8000

	AF M408512	AF M501012	AF M601212
Max. Air Flow*	377.6 l/s / 800 cfm	566.4 l/s / 1200 cfm	755.2 l/s / 1600 cfm
Outlet Diameter	101.6mm / 4.00"	127.0mm / 5.00"	152.4mm / 6.00"
Filter Element	AF M8040	AF M8050	AF M8060
Length	317.5mm / 12.50"	317.5mm / 12.50"	317.5mm / 12.50"
Depth	243.5mm / 9.59"	282.8mm / 11.14"	343.2mm / 13.51"
Hose Barb size	25.4mm / 1.00"	25.4mm / 1.25"	31.75mm / 1.25"
Weight	1.89 kgs / 4.16 lbs	2.28 kgs / 5.03 lbs	3.63 kgs / 8.00 lbs
CCV hose barb	1" OD	1 1/4" OD	1 1/4" OD
Operating Temperature	-40° / +240° F / -40° / + 116° C		

Values given are cubic feet per minute (cfm) and liters per second (l/s).

Marine Air Filter / Silencer (AF) System

CV/CCV Accessories

Select a Fitting/Hose Kit:

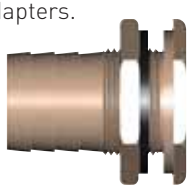
Fitting / Hose Kits come with both fittings and enough hose for the inlet and outlet sides of the Racor CCV assembly. Racor CCV filter units require straight thread o-ring x hose barb fittings available only at Racor. In order to determine the correct application, you need to know the quantity and the outside diameter of engine breather(s) hose connection. Fitting/Hose Kits are available in various sizes and configurations. Consult factory or Racor.com.

Optional Tap Sleeves

CCV30100, CCV40100, CCV50125, CCV50125

Hump Hose Fittings

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



Part Number	Hose
CCV55113	1*
CCV55114	1 1/4"
CCV55115	1 1/2"

FIG. 3

Air Filter Cleaning Kit

To be used for washing and re-oiling Racor cleanable air filters. Part Number: AFM82006

Air Filter Accessories

Low Resistance Flexible Air Inlet Fitting and Clamps

Rubber elbows, adapters and clamps provide positive sealing, minimal airflow restriction and easy servicing.

Flexible air inlet fittings are made of high quality EPDM rubber, and provide minimum airflow restriction between the air cleaner and engine air inlet. Their flexibility simplifies both installation and service. Stainless steel adjustable clamps assure a positive seal and ease of service.

Cabin Air Filters

Presently, 40% of all vehicles in use have a cabin air filter installed. These filters are used to remove dust, pollen, mold spores, engine exhaust and other gases from the cabin air. The filter should be changed out every 15,000 miles. By servicing the filter, the heater and evaporator will be protected from corrosion and the air in the cabin compartment will be more healthy for the occupants.

Racor now offers cabin air filters for select replacement applications.

Call Racor today to see if your cabin air filter is available.

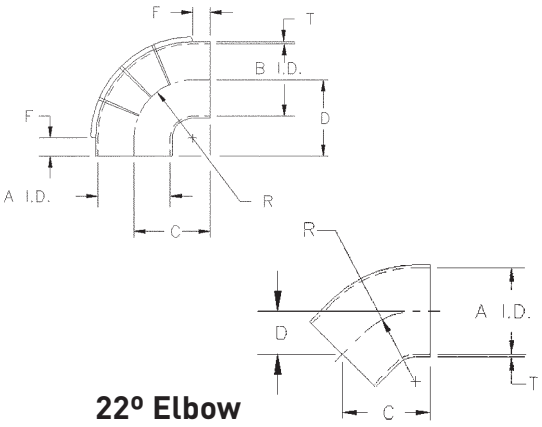
Rubber Elbows, Adapters & Clamps

90º Reducing Elbow

Part Number	A	B	C	D	E	F	R	T
401403025	6.00	5.50	6.75	6.75	1.50	1.75	5.00	0.25
401403029	7.00	5.50	6.25	5.75	1.50	1.50	3.68	0.31
401403033	7.00	5.00	6.25	7.00	2.74	2.74	4.25	0.25
401403035	6.00	5.00	6.00	7.00	1.75	1.75	4.25	0.25
401403041	6.00	5.00	4.75	4.75	1.25	1.25	3.50	0.25
401403044	7.00	6.00	9.00	7.56	3.00	3.00	4.38	0.38
401403056	5.00	4.00	6.00	5.75	1.75	1.75	3.75	0.25
401403057	4.00	3.00	4.50	3.62	1.50	1.50	3.00	0.19
401403066	4.00	3.50	3.62	4.50	1.50	1.50	3.00	0.19
401403091	7.00	6.00	7.00	5.00	1.63	2.50	4.38	0.37
401403092	8.00	7.00	8.50	8.50	2.00	2.00	6.50	0.42
401403098	4.00	3.75	5.75	5.75	2.75	2.75	3.00	0.25
401403206	6.00	4.00	6.00	6.25	2.75	2.50	3.50	0.25
401403207	6.00	4.00	4.75	4.75	1.25	1.25	3.50	0.25
401403208	6.00	4.00	5.81	4.75	1.25	2.31	3.50	0.25
401403209	6.00	4.00	5.50	6.25	2.75	2.00	3.50	0.25
401403219	3.00	2.36	3.00	3.00	0.68	1.00	2.00	0.25

90º Elbow

Part Number	A	B	C	D	F	R	T
401403001	3.50	3.50	5.50	5.50	1.50	4.00	0.25
401403002	4.00	4.00	5.75	5.75	1.25	4.50	0.25
401403003	5.50	5.50	6.50	6.50	1.75	4.75	0.25
401403004	7.00	7.00	7.56	7.58	2.00	5.56	0.31
401403013	5.00	5.00	6.12	6.12	1.62	4.50	0.25
401403014	6.00	6.00	6.75	6.75	1.75	5.00	0.25
401403019	8.00	8.00	8.50	8.50	2.00	6.50	0.38
401403030	2.00	2.00	3.50	3.50	1.50	2.00	0.20
401403038	3.00	3.00	5.25	5.25	1.50	3.75	0.25
401403058	2.50	2.50	4.00	4.00	1.50	2.50	0.25
401403063	10.00	10.00	10.50	10.50	2.00	8.50	0.37
401403201	4.50	4.50	5.50	5.50	2.00	3.50	0.25
401403205	6.00	6.00	5.00	5.00	1.50	3.50	0.25



22º Elbow

Part No.	A	C	D	R	T
401403034	5.50	5.15	1.75	4.75	0.25
401403210	6.00	5.25	1.75	5.00	0.25
401403214	4.00	4.25	1.50	4.00	0.25

38º Elbow

Part No.	A	C	D	R	T
401403204	6.00	7.30	2.25	4.00	0.25

54º Elbow

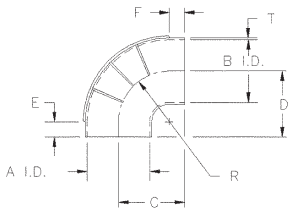
Part No.	A	C	D	R	T
401403216	5.50	7.81	1.87	6.00	0.25
401403217	6.00	7.44	1.75	5.75	0.25

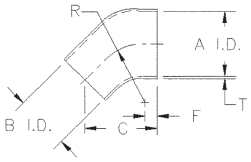
63º Elbow

Part No.	A	C	D	R	T
401403220	8.00	11.90	2.00	5.60	0.38

68º Elbow

Part No.	A	C	D	R	T
401403211	5.50	8.31	2.00	4.80	0.25
401403215	4.50	8.50	2.30	4.30	0.25
401403218	6.00	9.13	1.75	7.25	0.25



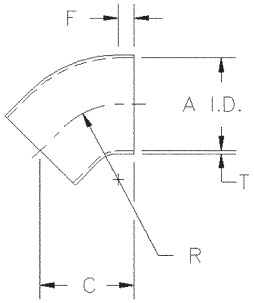


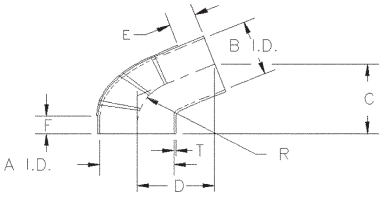
45º Reducer Elbow

Part Number	A	B	C	F	R	T
401403042	7.00	6.00	7.38	1.75	5.56	0.31
401403003	6.00	5.00	6.44	1.75	4.00	0.23
401403013	6.00	5.50	6.44	1.75	4.87	0.25

45º Elbow

Part Number	A	C	F	R	T
401403005	3.50	5.00	1.68	3.50	0.25
401403006	4.00	5.50	1.46	4.25	0.25
401403007	5.50	6.25	1.70	4.75	0.25
401403008	7.00	8.00	2.38	5.56	0.31
401403015	5.00	5.50	1.36	4.50	0.25
401403016	6.00	6.50	1.74	5.00	0.25
401403020	8.00	8.06	2.00	6.50	0.38
401403059	3.00	5.50	1.60	3.75	0.25
401403202	10.00	10.50	2.25	8.50	0.37
401403212	4.50	5.06	1.50	3.50	0.25



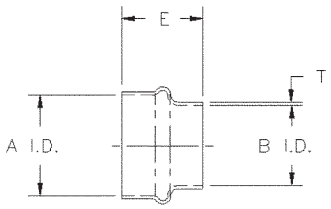


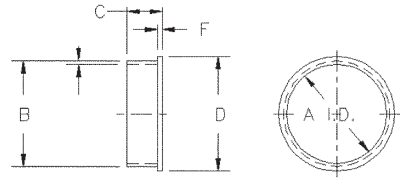
68º Reducer Elbow

Part No.	A	B	C	D	E	F	R	T
401403055	7.00	6.00	7.60	6.00	3.43	1.68	5.00	0.25

Reducer Hump Hose

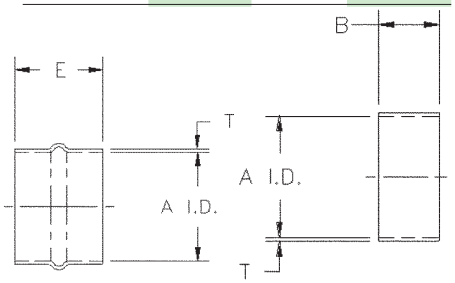
Part No.	A	B	E	T
015094022	6.00	5.00	6.00	0.25
015094023	6.00	5.50	6.00	0.25
015094024	5.50	5.00	6.00	0.25
015094026	5.50	4.00	6.00	0.25
015094027	3.50	3.00	6.00	0.25
015094031	7.00	5.50	7.00	0.25
015094032	8.00	7.00	5.00	0.25
015094037	7.00	5.00	7.00	0.25
015094045	7.00	6.00	6.00	0.25
015094060	3.00	2.50	6.00	0.25
015094061	4.00	3.00	5.25	0.25
015094062	10.00	8.00	6.00	0.25
015094065	5.00	4.00	6.00	0.25
015094073	4.50	4.00	6.00	0.25
015094086	8.00	5.50	7.00	0.25
015094092	8.00	6.00	6.00	0.25
015094105	4.00	3.50	5.25	0.25
015094106	6.00	4.00	6.00	0.25
015094107	6.00	4.00	8.00	0.25
015094108	6.00	4.00	7.00	0.25
015094109	6.00	4.00	7.00	0.25
015094111	3.00	2.75	3.50	0.19
015094112	3.50	2.75	4.00	0.19
015094113	4.00	2.75	4.00	0.19
015094114	3.50	2.50	6.00	0.25
015094115	3.00	2.36	6.00	0.25





Straight Sleeve

Part No.	A	B	T
015094047	2.75	2.40	0.25
015094048	3.50	2.50	0.25
015094049	3.50	3.00	0.25
015094050	4.75	3.20	0.25
015094051	5.50	3.80	0.25
015094052	5.50	4.00	0.25
015094053	6.00	3.50	0.25
015094054	7.00	5.00	0.25
015094070	5.00	2.50	0.25
015094075	4.00	3.50	0.25
015094076	5.00	3.50	0.25
015094077	7.00	3.50	0.25
015094078	8.00	3.50	0.25
015094079	9.00	3.50	0.25
015094095	6.00	6.50	0.25
015094097	4.00	3.00	0.25

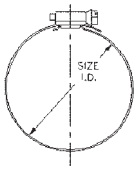


Coupling

Part No.	A	E	T
015094009	3.50	5.25	0.25
015094010	4.00	5.25	0.25
015094011	5.50	6.00	0.25
015094012	7.00	7.00	0.25
015094017	5.00	6.00	0.25
015094018	6.00	6.00	0.25
015094021	8.00	8.00	0.31
015094039	3.00	5.25	0.25
015094040	10.00	6.00	0.25
015094046	4.50	6.00	0.25
015094116	5.00	4.88	0.25
015094117	8.00	5.00	0.25

Worm Gear Clamp

Part No.	I.D (min)	I.D (max)
046900001	2 1/16	3
046900005	2 9/16	3 1/2
046900006	2 3/4	4 5/8
046900007	4 5/8	5 1/2
046900008	5 1/8	6
046900009	13/16	1 3/4
046900010	1 9/16	2 1/2
046900011	4 1/8	5
046900012	5 5/8	1 1/2
046900013	3 1/16	4
046900014	6 1/8	7
046900015	6 7/8	7 3/4
046900016	8 3/8	9 1/4
046900017	9 1/8	10
046900018	7 5/8	8 1/2
046900019	9 7/8	10 3/4
046900020	11 3/8	12 1/4
046900021	14 3/8	15 1/4
046900022	15 1/8	16
046900024	3 5/16	4 1/4
046900025	1 5/16	2 1/4
046900026	3 1/8	6
046900027	4 1/8	7

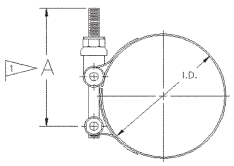


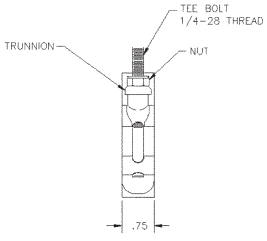
T-Bold Clamp

Part No.	I.D (min)	I.D (max)
111657001	1.88	2.12
111657002	2.31	2.62
111657003	2.81	3.12
111657004	3.31	3.62
111657005	3.81	4.12
111657006	4.31	4.62
111657007	4.81	5.12
111657008	5.31	5.62
111657009	5.81	6.12
111657010	6.31	6.62
111657011	7.44	7.75
111657012	8.44	8.75
111657013	6.75	7.06
111657014	7.75	8.06
111657015	8.50	8.81
111657016	9.69	10.00
111657017	10.50	10.81
111657018	6.50	6.81
111657019	7.50	7.81
111657020	9.25	9.56
111657021	10.31	10.62
111657022	7.06	7.38
111657023	7.13	7.44
111657024	7.19	7.50
111657025	7.00	7.31

Reducer Insert Sleeve

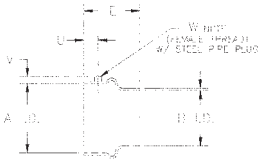
Part Number	A	B	C	D	F	T
015094036	5.00	5.50	1.75	6.00	0.25	0.25
015094043	5.50	5.00	1.75	6.50	0.25	0.25
015094064	5.00	5.00	1.75	6.50	0.25	0.50
015094072	4.00	5.00	1.75	5.50	0.25	0.50
015094080	3.00	4.00	1.75	4.50	0.25	0.50
015094081	6.00	7.00	1.75	7.50	0.25	0.50
015094082	8.00	9.00	1.75	9.50	0.25	0.50
015094089	2.75	4.00	1.75	4.50	0.25	0.62
015094094	2.25	2.50	1.75	3.00	0.25	0.13
015094096	6.25	7.00	1.75	7.50	0.25	0.38
015094102	4.50	5.00	1.75	5.50	0.25	0.25
015094103	4.00	5.50	1.75	6.00	0.25	0.75
015094104	4.00	4.50	1.75	5.00	0.25	0.25





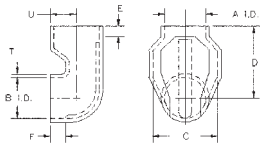
Reducer Coupling w/Fitting

Part Number	A	B	E	T	U	V	W
125291001	7.00	5.00	7.00	0.25	1.83	.63	1/8
125291002	7.00	5.50	7.00	0.25	1.83	.75	1/8
125291003	7.00	6.00	6.00	0.25	1.56	.88	1/8
125291004	6.00	5.00	6.00	0.25	1.50	.75	1/8
125291005	7.00	4.00	8.00	0.25	3.83	.63	1/8



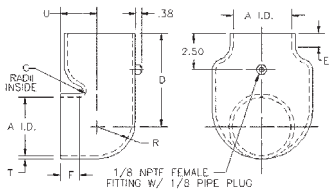
Cobra 90º Elbow (Special)

Part Number	A	B	C	D	E	F	T	U
401079068	3.00	3.00	5.00	5.35	1.75	1.14	0.25	1.93
407079074	4.00	5.00	6.62	7.00	2.00	1.00	0.31	2.50
401079093	6.00	5.00	9.23	10.80	2.00	1.50	0.32	5.00



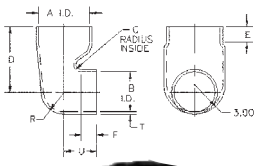
Cobra 90º Elbow

Part Number	A	C	D	E	F	R	T	U
401079069	4.00	0.75	6.44	1.50	1.50	2.00	0.25	2.69
401079071	4.00	0.75	6.44	1.50	1.50	2.00	0.25	2.69
401079087	4.00	0.75	6.44	1.50	2.00	2.00	0.25	3.19



Cobra 90º Elbow (Special)

Part Number	A	B	C	D	E	F	R	T	U
401079083	5.00	4.00	0.75	6.44	1.50	1.50	2.25	0.25	3.19
401079090	5.00	4.00	0.75	6.44	1.50	0.88	2.25	0.25	2.57



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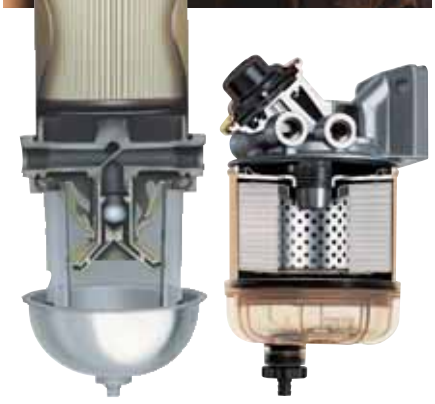

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AE – UAE, Dhabi
Tel: +971 4 8127100
parker.me@parker.com

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe,
Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE /LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BR – Brazil, Cachoeirinha RS
Tel: +55 51 3470 9144

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

CH – Switzerland, Etoy
Tel: +41 (0) 21 821 02 30
parker.switzerland@parker.com

CN – China, Shanghai
Tel: +86 21 5031 2525

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 33 00 01
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France,
Contamine-s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HK – Hong Kong
Tel: +852 2428 8008

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IN – India, Mumbai
Tel: +91 22 6513 7081-85

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

JP – Japan, Tokyo
Tel: +(81) 3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

LV – Latvia, Riga
Tel: +371 6 745 2601
parker.latvia@parker.com

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NL – The Netherlands,
Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Ski
Tel: +47 64 91 10 00
parker.norway@parker.com

NZ – New Zealand,
Mt Wellington
Tel: +64 9 574 1744

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal,
Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SG – Singapore
Tel: +65 6887 6300

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TH – Thailand, Bangkok
Tel: +662 717 8140

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

UA – Ukraine, Kiev
Tel +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom,
Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

US – USA, Cleveland
Tel: +1 216 896 3000

VE – Venezuela, Caracas
Tel: +58 212 238 5422

ZA – South Africa,
Kempton Park
Tel: +27 (0)11 961 0700
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Catalogue FDRB371UK 05/2009

Parker Racor

European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, DK, ES, FI, FR, IE, IT, NL, NO, PT, RU, SE, UK, ZA)
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