



FILTERMIST MIST COLLECTORS

LOW-COST, HIGHLY EFFICIENT,
AND MINIMAL MAINTENANCE

See Free After
Filter Promotion
on Page 189





THE WORLD'S LEADING MIST COLLECTOR

For over 40 years, the Royal Filtermist has been effectively collecting mist and smoke generated by all types of metalworking machinery.

There are currently **more than 190,000 units operating in over 60 countries** worldwide, making Filtermist the world leader in metalworking pollution control equipment.

Throughout its history, the Royal Filtermist has undergone continuous design advances. The Filtermist FX represents the ninth generation of Royal Filtermist, and is the result of extensive computer-aided modeling and testing. Based upon the well-established principle of centrifugal impaction, the Filtermist FX incorporates a series of improvements that have resulted in the most advanced and effective system available for the removal of mist and smoke created by metalworking machinery.



Check out the Royal Filtermist Video at www.mistcollectors.com

Contents

Why Control Oil Mist and Smoke in Your Shop?	Page 183
Common Mist Collection Methods	Pages 184-185
How Does the Royal Filtermist Work?	Page 186
Royal FX Series Design Features	Page 187
Why is the Royal Filtermist the Best Choice for the Metalworking Industry?	Page 188
Royal Risk-Free Performance Guarantee	Page 189
Royal Filtermist Performance Accessories	Pages 190-191
Royal Filtermist Mounting Options	Pages 192-193
Choosing the Correct Filtermist Unit	Pages 194-195
Royal Filtermist Efficiency	Page 196
Commonly Asked Royal Filtermist Questions	Page 197
Royal Filtermist Model FX-300	Page 198-199
Royal Filtermist Model FX-575	Page 200-201
Royal Filtermist Model FX-900	Page 202-203
Royal Filtermist Model FX-1200	Page 204-205
Royal Easy Mount™ Filtermist Packages	Page 206
Royal Filtermist Maintenance	Page 207
Royal Filtermist Replacement Parts	Page 208
A Royal Filtermist for Every Application	Page 209

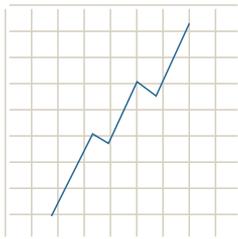
WHY CONTROL OIL MIST & SMOKE IN YOUR SHOP?



- ❑ **Reduced Health Risks**
Any form of pollution is potentially dangerous to the lungs, larynx, and skin.
- ❑ **Reduced Accident Risks**
Oil mist creates slippery surfaces which increase accident rates.
- ❑ **Reduced Fire Hazards**
Oil deposits create a serious fire risk by allowing fires to spread quickly.



- ❑ **Coolant Cost Savings**
The Royal Filtermist recycles coolant and returns it to your machine rather than venting it to the atmosphere.
- ❑ **Heating and Cooling Cost Savings**
The Royal Filtermist **returns clean air to the shop** instead of exhausting it outdoors.
- ❑ **Cleaning and Maintenance Cost Savings**
Uncontrolled airborne mist and smoke deposits result in more frequent cleaning of exposed surfaces.



**INCREASED
PRODUCTIVITY**

- ❑ **Thermal Stability**
Filtermist aids in temperature control which can **help machines hold tighter tolerances over long-running jobs and/or during unmanned production.**
- ❑ **Improved Employee Attendance**
A contaminated shop environment often results in higher worker absenteeism and lower morale.
- ❑ **Less Machine Downtime**
Fouled contacts in electronic equipment cause expensive downtime.
- ❑ **Higher Speeds and Feeds**
Machining operations can **run at higher speeds and feeds** without the negative effects of increased mist and smoke production.
- ❑ **Better Lighting**
Haze from mist and smoke and grimy buildup on shop lighting fixtures cause even the most well-lit shops to take on a dingy appearance. Bright, cheerful environments improve employee morale and performance.



- ❑ **Fewer Workmen's Compensation Claims**
The increase in workmen's compensation rates from one large claim can cost more than an air cleaning system for an entire factory.
- ❑ **Government Regulations**
The current OSHA and NIOSH limits on airborne oil mist are 5 mg/cubic meter, and this requirement is expected to become even stricter in the future. The Royal Filtermist exceeds **both the current and new proposed limits.**



- ❑ **Attracting and Keeping Good Employees**
Your employees expect and deserve a workplace that is as hazard-free as you can make it. One customer, when asked why he wanted to control the oil mist and smoke in his plant, responded, "I wouldn't expect my office people to work with smoke pouring out of their computers, and I sure don't expect my shop workers to work on machines with oil mist pouring out of them!"

The greatest challenge facing today's manufacturers is attracting and keeping talented employees. Don't risk losing good people to the competition because of poor air quality in your shop. Call Royal today!

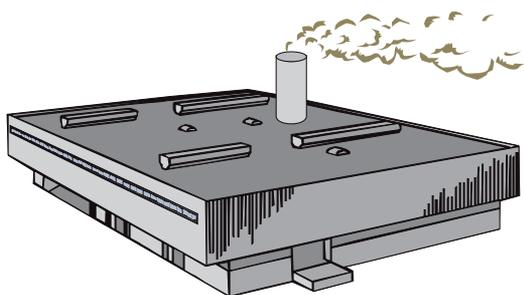


COMMON MIST COLLECTION METHODS

In order to fully understand why the Royal Filtermist is the best choice for handling oil mist and smoke produced by the metalworking industry, it is important to have some general knowledge of how other types of collection systems work. This section contains an overview of the most common methods for controlling mist and smoke. While these systems all have some positive features, their drawbacks make them unsuitable for use in most metalworking applications.

External Venting

At one time, the only method for controlling oil mist and smoke in a shop was to vent it out of the building. This was done either by opening the doors and windows or installing a ventilation system. While this method may look like an attractive low-cost solution, the potential dangers should be enough to make any shop owner reconsider this practice.



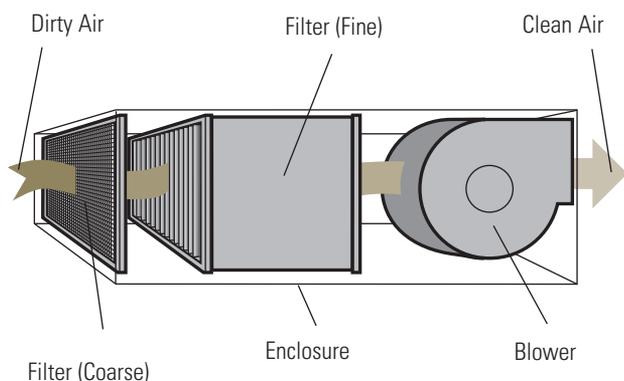
Environmental Hazards Today, it is illegal in many states to exhaust pollutants to the atmosphere. Offending companies run the risk of large fines and lawsuits.

Fire Hazards Over time, oil deposits collect in the ductwork of ventilation systems, making them prime targets for flash fires and providing pathways for fires to spread quickly.

Cleanliness Problems As mist and smoke travels through a shop to the exhaust points, it collects on exposed surfaces. Over time, a grimy buildup occurs on machines, lights, floors, and walls, resulting in dirty, unsafe conditions.

Media-Type Filtration Systems

Media-type filtration systems typically consist of a blower and several filters of varying efficiencies. The contaminated air first passes through a coarse pre-filter where the largest particles are filtered out. It then moves through one or two medium-range filters before reaching the final filter, which is usually made from a high-efficiency HEPA material. Media-type systems are good at collecting dry contaminants such as welding smoke and graphite dust. However, they are often not suitable for metalworking applications where coolant mist is the primary contaminant.



High Operating Costs The biggest drawback of media-type filtration systems is the high operating cost associated with replacement filters. These filters are designed to retain contaminants, so they will become clogged with use. Usually they are made from media that cannot be cleaned, so the only alternative is replacement. Depending upon the cost of the filters and the replacement frequency, this type of system can be quite expensive to operate over the long term.

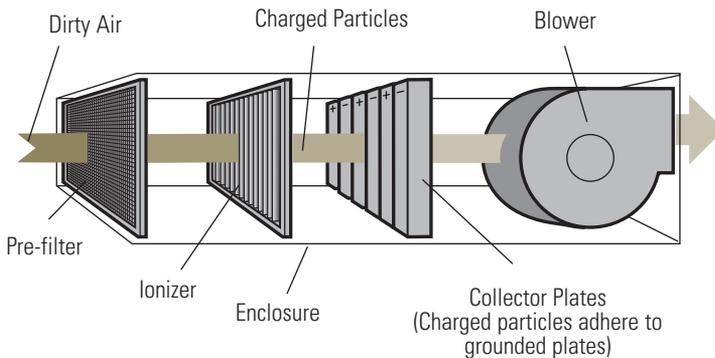
Decreased Throughput Another problem with multi-stage filter units is that the throughput of the system, measured in cfm, decreases as contaminants become trapped in the pores of the filters. It is important to maintain the correct throughput of any collection system. Reduced throughput means reduced collection, allowing contaminants to escape into the shop air.

Not for Mist Most media filters are designed to collect dry pollutants such as smoke and dust. Exposure to coolant and oil mist may damage certain types of filter media.



Electrostatic Precipitators

Electrostatic precipitators use a blower to draw mist and smoke particles past an ionizer, which imparts a positive charge to them. They then pass across a series of alternately like-charged and grounded collection plates. The particles are repelled by the like-charged plates and forced towards the grounded plates where they collect. The filtered air is returned to the shop.



Variable Efficiency Although electrostatic systems are very efficient when the collection plates are clean, the efficiency drops off drastically as the plates become covered with particles. Each time a particle deposits on a plate, it eliminates a spot for other particles to adhere to.

Maintenance Costs To maintain high efficiency, the collection plates must be cleaned often. This can be expensive because the residue is considered to be hazardous waste and must be disposed of by a certified waste handling company. Many electrostatic systems are sold with costly maintenance contracts, resulting in operating costs that greatly exceed the original unit purchase price.

Health Hazards As the collection plates become full, a phenomenon known as arcing can occur. This arcing results in the **production of ozone**, which has been found to cause a variety of health problems. This potential danger (and the fear of lawsuits) has caused many U.S. companies to remove electrostatic units from their factories.

The Dangers of Ozone

Ozone produced by electrostatic precipitators has been identified as a health risk to humans. Several U.S. government agencies have weighed-in on ozone as it relates to indoor air quality:

According to the **Environmental Protection Agency (EPA)**: *When inhaled, ozone can damage the lungs. Relatively low amounts can cause chest pain, coughing, shortness of breath and throat irritation. Ozone may also worsen chronic respiratory diseases such as asthma and compromise the ability of the body to fight respiratory infections. People vary widely in their susceptibility to ozone. Healthy people, as well as those with respiratory difficulty, can experience breathing problems when exposed to ozone.*

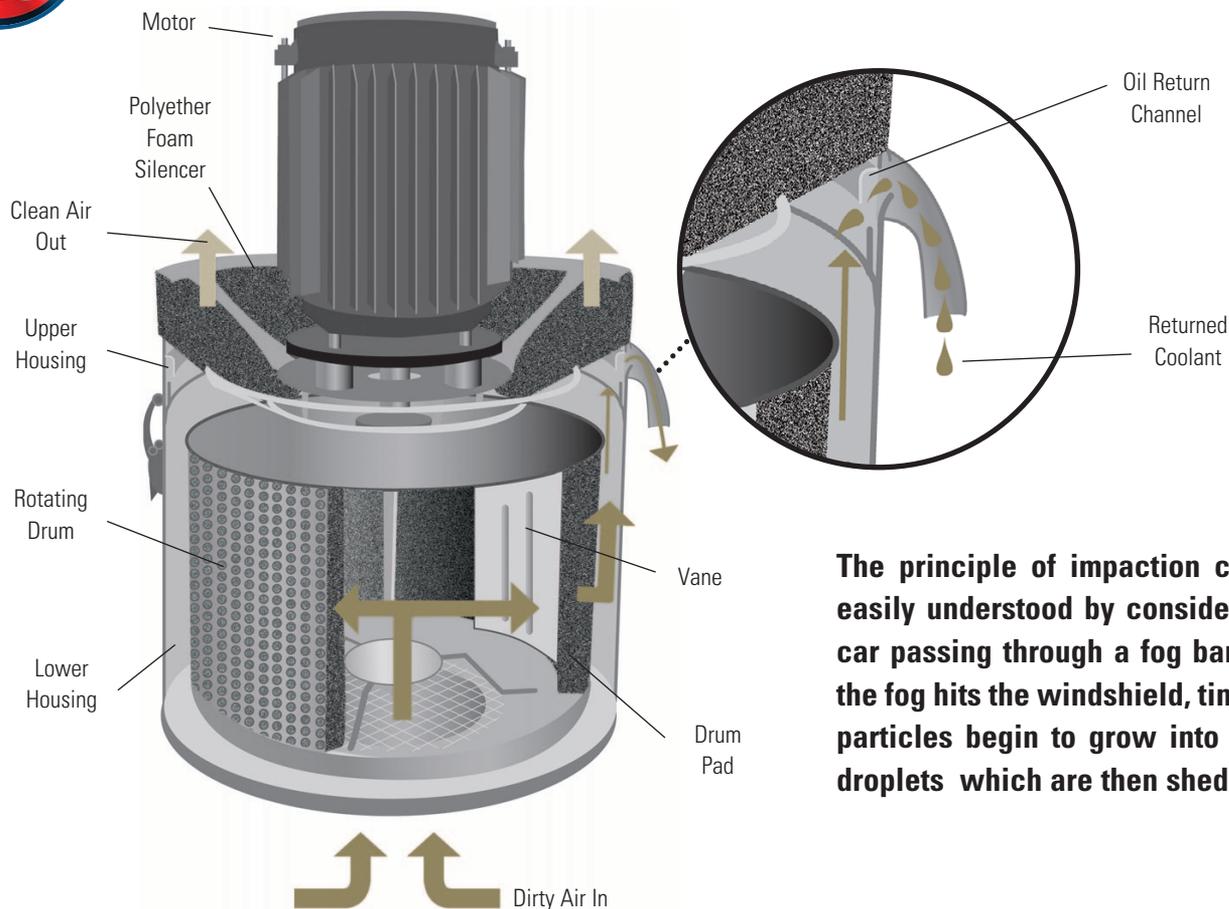
Current U.S. guidelines on indoor ozone levels:

- The **Occupational Safety and Health Administration (OSHA)** requires that workers not be exposed to an average concentration of more than 0.10 ppm (parts per million) for 8 hours.
- The **National Institute of Occupational Safety and Health (NIOSH)** recommends an upper limit of 0.10 ppm, not to be exceeded at any time.

Because of these health risks, many companies have established policies that ban the use of electrostatic mist collectors in their facilities.



HOW DOES THE ROYAL FILTERMIST WORK?



The principle of impaction can be easily understood by considering a car passing through a fog bank. As the fog hits the windshield, tiny mist particles begin to grow into water droplets which are then shed off.

The Royal Filtermist uses the principle of centrifugal impaction to eliminate mist. With only three main components: a drum, a motor, and the housing, its operation is quite simple.

1. A three-phase motor rotates the internal drum at high speed, creating a vacuum which draws mist particles into the center of the drum.
2. The mist particles then collide with the rotating drum's vanes and are forced together with other particles, causing them to coalesce and form larger, droplet-sized particles.
3. As the particles grow into droplets, they pass through the perforations in the rotating drum and centrifugal force causes them to be thrown onto the inner wall of the housing.
4. The particles are then forced, under pressure, up the walls of the housing to the oil return channel, where they are subsequently drained back to the machine's coolant tank.
5. Clean, oil-free air blows past the motor and is returned to the shop.
6. Since this process relies on the mechanical principle of centrifugal impaction and the rotational speed remains constant, **the Royal Filtermist maintains a continuous high efficiency.**
7. For certain applications that produce smoke and/or very fine mist particles, an after filter may be required. This filter easily mounts to the top of the Filtermist unit by slipping over the motor and it is secured in place with two toggle clips. An after filter mounted to a Royal Filtermist typically enjoys a comparably long service life because most contaminants are removed by the impaction process prior to reaching the filter.

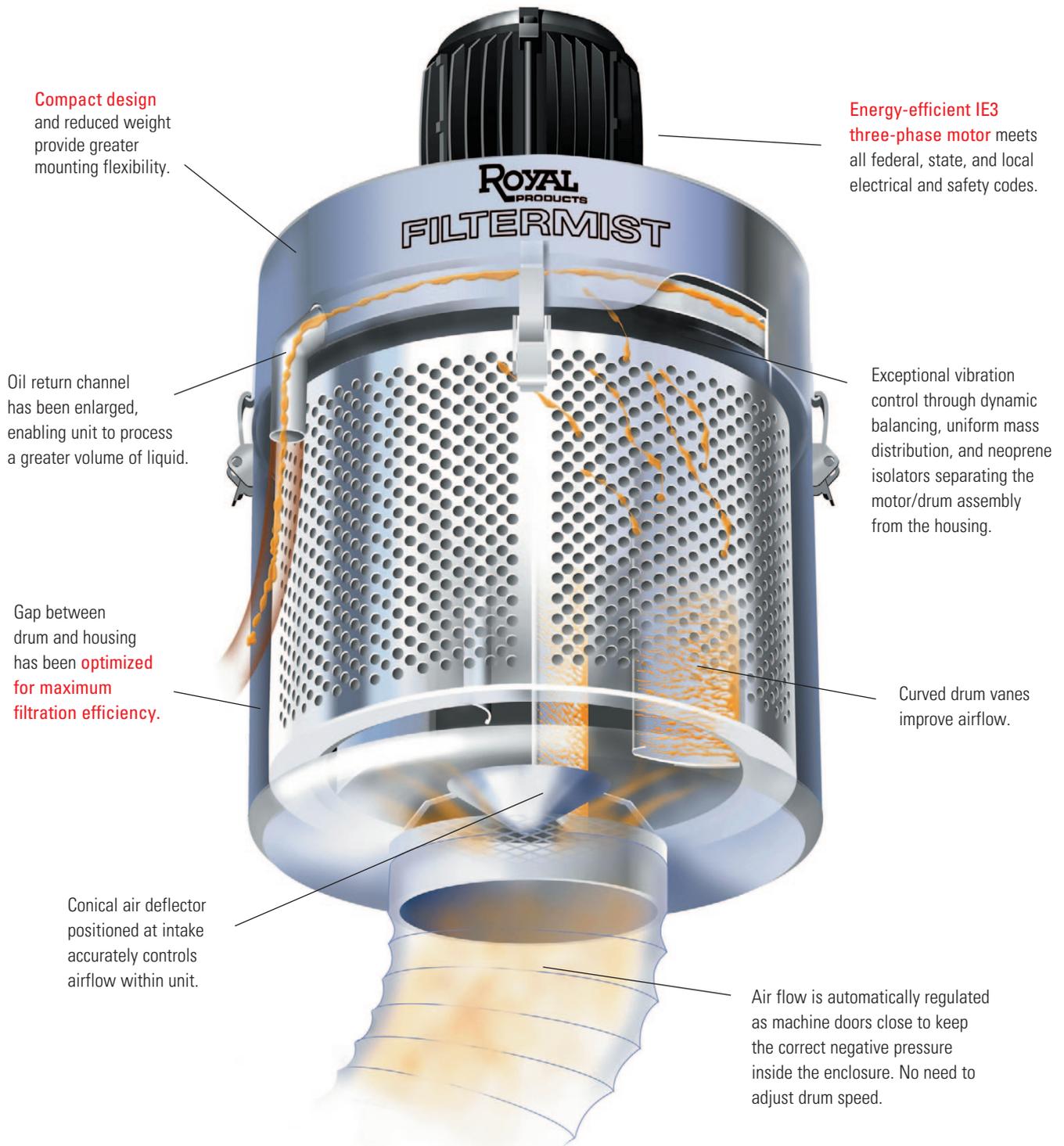
Note – it is important to understand that the pads that line the Filtermist drum are not filters. These porous pads are present to slow airflow through the unit, thereby maximizing contact with the drum vanes for greatest overall impaction efficiency.

IMPORTANT — All Filtermist units should be electrically wired to run continuously throughout a standard shift. Units should never be wired to switch on and off with the machining cycle. Please see installation manual for additional information.

ROYAL FX SERIES DESIGN FEATURES



The Royal Filtermist FX Series is the ninth generation of Filtermist. FX Models incorporate a number of design improvements over previous versions to provide the most advanced and effective system available for the removal of mist and smoke.





WHY IS THE ROYAL FILTERMIST THE BEST CHOICE FOR THE METALWORKING INDUSTRY?

High Efficiency

The Royal Filtermist maintains a continuous high efficiency through constant drum speed. Performance does not decrease with use. See page 196 for efficiency information.

Low Maintenance

Because the unit works on a mechanical principle instead of electrostatics or multi-stage filters, the Royal Filtermist **requires significantly less maintenance** than most other filtration systems on the market. The small amount of regular maintenance that is required can be easily performed by the customer. See page 207 for maintenance information.

Heavy-Duty Construction

When you purchase a Royal Filtermist, you receive a quality product. Features found on all units include:

- Heavy-duty 3-phase motors that meet all federal, state and local electrical and safety codes.
- All exposed surfaces on the drum and housing are powder coated for wear resistance and long life.
- Very tight manufacturing tolerances provide precise fits between mating parts and ensure that the unit will provide years of trouble-free service.

Vibration Control

The Royal Filtermist incorporates unique features to help it overcome vibration-related problems that are sometimes associated with other centrifugal impaction type systems:

- All drums are dynamically balanced at the factory and tested before shipping.
- Vertical drum arrangement provides **even mass distribution**.
- Motor is connected to housing with four neoprene mounts, effectively isolating vibration and controlling startup torque.

Low Operating Costs

The Royal Filtermist is cost-effective to own and operate. Other types of systems (media, electrostatic, etc.) require frequent maintenance and costly filter replacement. Companies that sell these units often push expensive maintenance contracts that can far exceed the initial purchase price. Filtermist also consumes very little electrical power compared to other systems due to the use of **energy-efficient IE3 motors**. In fact, the tighter the machine enclosure, the lower the power draw.

No Heat/AC Waste

Processed air is returned to the shop, reducing heating and cooling costs. A/C service calls are also reduced by protecting intake filters from contaminants.

Flexibility

Units are portable and typically service individual machines, allowing machines to be easily moved or replaced. Large central systems are connected to multiple machines by costly and non-flexible ductwork, making relocation difficult.

Modular Design

The Royal Filtermist is a modular system. Accessories such as after filters, dust cyclones, deflectors, etc. can be easily added as applications require. See pages 190–191 for information on performance accessories.

Easy To Install

Multiple installation configurations allow the Filtermist to overcome almost any mounting obstacle. See pages 192–193 for mounting details.

Wide Range of Sizes

Four sizes ranging from 300–1200 cfm are available to suit all applications.

Strong Technical Support

A large network of local distributors and factory-trained representatives are strategically located throughout the country to provide quick and accurate on-site technical support.

5-Year Warranty

Every Royal Filtermist unit carries a **5-year warranty** against failure due to manufacturing defects. Other brands are only protected for 1–2 years. Please note that our warranty does not include normal wear and tear items such as drum pads, silencers, ductwork, etc. The motor carries a one-year warranty.

Proven Worldwide

There are over 190,000 units currently operating in over 60 countries worldwide, making Filtermist the world leader in metalworking pollution control equipment.

ROYAL RISK-FREE PERFORMANCE GUARANTEE



Designed Specifically to collect oil mist and smoke produced by metalworking machinery, the Royal Filtermist simply does the best job, over a longer period of time, for the lowest cost.

Still Not Convinced? Try a Unit Risk-Free!

We're so confident that the Royal Filtermist is the best solution for mist and smoke generated by metalworking machinery, we are willing to guarantee its performance. Our guarantee is simple:



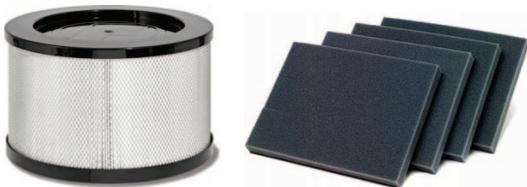
Risk-Free Performance Guarantee

Royal Products will issue full credit on any Royal Filtermist unit returned within 45 days of the purchase date if the customer is not completely satisfied with its performance. The following conditions apply:

1. The unit must be sized and installed according to the recommendations of our local factory representative and/or authorized Filtermist distributor.
2. Credit will be issued for the unit, but may not be issued for ductwork, oil return hoses, etc., if they are not in resalable condition.
3. The customer must contact Royal Products for a return goods number (RGA #). This number must appear on all paperwork and packaging of the unit being returned.
4. The returned unit must be securely packaged and arrive at Royal Products in good condition.

SPECIAL PROMOTION*

FREE AFTER FILTER AND DRUM PAD SET



Special Promotion – Royal Products will include a FREE standard after filter and a FREE set of drum pads with each new Royal Filtermist unit purchased – a value worth up to \$548 per unit.

For most applications, this essentially means your first-year maintenance is on us.

Royal's exclusive Risk-Free Performance Guarantee coupled with this money-saving promotion means there has never been a better time to provide your employees with a safer, healthier workplace. Order today!

* Not subject to prior sale. Royal Products reserves the right to cancel this promotion at any time without notice.



ROYAL FILTERMIST PERFORMANCE ACCESSORIES

Royal Products offers a number of optional accessories designed to enhance Filtermist performance, particularly in very demanding applications. Please contact one of our engineers at 1-800-645-4174 if you have any questions regarding the use of these performance accessories.

Royal Standard After Filter



After filters are available for all Royal Filtermist models. They can be used in any application where extreme high efficiency is required, and are especially useful for dealing with the following conditions:

- Applications where heavy, dry smoke is generated along with the mist.
- Applications that produce very fine mist particles which may sometimes bypass the impaction process, (jobs that run at very high spindle speeds, high-pressure coolant, etc.).

Important – An after filter should not be used to compensate for blow-thru that could result from improper installation. If you have questions or concerns about your installation, please contact one of our engineers at 1-800-645-4174.

Standard After Filter Advantages

Easy Installation

The Royal standard after filter simply slides over the Filtermist motor and is secured in place with two toggle clips.

High Efficiency

Adding a standard after filter to a Royal Filtermist unit will greatly **increase efficiency in the sub-micron range**. See page 196 for additional information on efficiency.

Noise Reduction

An after filter reduces the noise level of a Filtermist unit by approximately 3 dB.

Long Life

Royal standard after filters have extended service lives due to their large surface area. They also last longer because the centrifugal impaction process of the Filtermist removes most of the pollutants before they ever reach the filter. Systems that rely entirely on media filters for the filtering process tend to have much shorter service lives.

Full Range

Standard after filters are available for all size Filtermist units. Models are also available for older series units.

Royal High-Performance After Filters

For very demanding applications, Royal now offers an optimized high-performance after filter.

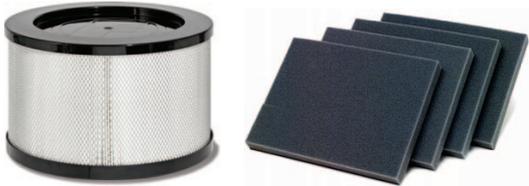
- **Great for all high-pressure oil applications – especially on Swiss machines.**
- Unique design incorporates two distinct types of filter media separated by an expansion gap.
- Integral venturi-assisted drain draws liquid away from the filter, greatly lengthening service life – testing has resulted in more than a **10x increase for certain applications**.
- Available for all Royal Filtermist FX-series units.
- In stock for immediate delivery.



Before ordering, please give one of our applications engineers a call to ensure that this filter is the correct solution for your specific application.



SPECIAL PROMOTION* FREE AFTER FILTER AND DRUM PAD SET



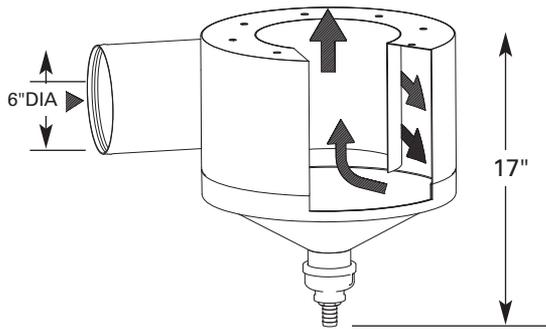
Special Promotion – Royal Products will include a FREE standard after filter and a FREE set of drum pads with each new Royal Filtermist unit purchased – a value worth up to \$548 per unit.

For most applications, this essentially means your first-year maintenance is on us.

Royal's exclusive Risk-Free Performance Guarantee coupled with this money-saving promotion means there has never been a better time to provide your employees with a safer, healthier workplace. Order today!

* Not subject to prior sale. Royal Products reserves the right to cancel this promotion at any time without notice.

Royal Cyclonic Swarf Separator



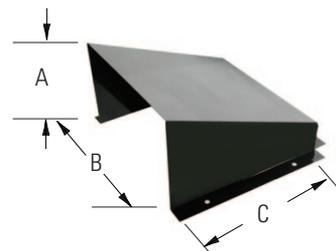
- Recommended for applications that generate solid particles, such as wet grinding dust, cast iron fines, etc.
- Also good for high-speed aluminum milling that produces light fly-away chips.

- Cyclonic action removes solid particles, ensuring that only mist is drawn into the Filtermist unit.
- Acts as a great pre-filter for high pressure coolant applications.
- Reduces maintenance in difficult applications such as heavy grinding.**
- Easily attaches to the bottom of the Filtermist unit. Note – the separator cannot be used in direct-mount applications.
- 6" diameter intake port is located on the side of the unit.
- 5ft. of return hose is included for continuous draining.
- Two-piece design allows for easy cleaning.
- Not for use in purely dry applications.
- For models FX-900 and FX-1200 only.
- Reduces throughput of Filtermist unit by approximately 300 cfm.

Royal Chip Deflector

- Protects the Filtermist intake from chips and direct coolant splash.
- Opening is large enough to ensure that airflow and intake velocity are not negatively affected.
- Powder coated finish** protects against rust.
- Can be used with all size Filtermist models.
- See page 193 for additional information on correct intake positioning.

MODEL	A	B	C
30220 (FX-900 & 1200)	6"	9 1/2"	10"
30222 (FX-300 & 575)	4 3/4"	8 1/2"	8 1/2"





ROYAL FILTERMIST MOUNTING OPTIONS

A wide variety of mounting options makes the Royal Filtermist very easy to install on virtually any machine tool.

All brackets, stands, and mounting accessories may be ordered individually for your particular application, or you can enjoy the ease of single part number ordering with our universal Easy-Mount™ packages featured on page 206.

For all mounting questions, please contact one of our applications engineers at 1-800-645-4174.

	FX-300	FX-575	FX-900	FX-1200
Direct Mount	YES	YES	YES	YES
Floor Stand	YES	YES	YES	YES
Machine Top Stand	YES	YES	YES	YES
Wall Mount	YES	YES	YES	YES
Side Mount	YES	YES	NO	NO
Plenum	YES	YES	YES	YES

Direct



Very cost-effective and **our most popular mounting method**. The mist collector mounts to the top of the machine tool enclosure directly over the appropriate intake position.

Models FX-300 and 575 come with everything needed for direct mounting. For models FX-900 and 1200, be sure to order the appropriate direct mount kit.

Items needed for direct mounting:

- Filtermist Unit
- Direct Mount Kit (FX-900 and 1200)



Direct mount kits include collar seal, rigid mounting studs, and hardware.

Floor Stand



Useful for open-top machine tools such as vertical machining centers where there is no option for mounting the mist collector on top of the machine.

The floor stand for models FX-900 and 1200 is adjustable from 6-9ft.

The floor stand for models FX-300 and 575 is fixed at 6ft.

Note - all floor stands must be bolted to the factory floor to prevent tipping.

Items needed for floor stand mounting:

- Filtermist Unit
- Floor Stand
- Ducting
- Flange Adapter
- Ducting Clamps



Wall Bracket



Wall mount brackets are available for all models. These brackets can be mounted to walls or I-beams, and can also be used to mount the mist collector to the side of the machine tool as shown.

Items needed for wall mounting:

- Filtermist Unit
- Wall Mount Bracket
- Ducting
- Flange Adapter
- Ducting Clamps





ROYAL FILTERMIST MOUNTING OPTIONS

Machine Top Stand



A great option when you want the mist collector off the floor, but your machine doesn't lend itself to direct mounting because the ideal intake location within the machine enclosure is not compatible with the mist collector positioning.

The machine top stand for models FX-900 and 1200 has a fixed height of 36". Two height options are available for models FX-300 and 575: 28" and 9.5".

Items needed for machine top stand mounting:

- Filtermist Unit
- Ducting
- Ducting Clamps
- Machine Top Stand
- Flange Adapter



Side Mount Bracket



The side mount bracket is specifically designed for models FX-300 and 575. It mounts directly to the side of the machine tool with no ducting required.

Bracket includes an integral chip deflector. Provides a very clean installation on most smaller CNC machine tools.

Items needed for side mount bracket:

- Filtermist Unit
- Side Mount Bracket



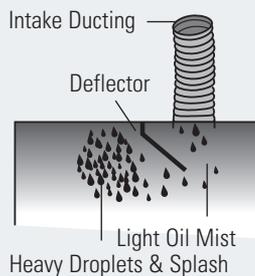
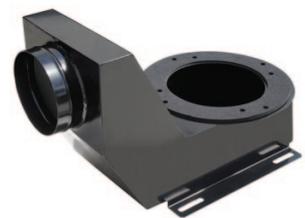
Plenum



With its side-located intake, Royal's new plenum offers the flexibility for machine top mounting in applications where the mist collector location and intake point are not compatible. Available for all models.

Items needed for plenum mounting:

- Filtermist Unit
- Plenum
- Flange Adapter
- Ducting Clamps
- Ducting



Very Important – Intake Location

No matter what type of machine you are installing your Royal Filtermist on, it is very important to always locate the intake in a position where it will collect mist - not splash. A common mistake is to locate the collection point too close to the cutting action, causing raw coolant and chips to be drawn into the unit.

Whenever possible, draw the mist across the machine enclosure from an area of heavy concentration to an area of lighter concentration. For machines where the intake must be positioned near the cutting action, a deflector can be used to protect the intake from chips and coolant while allowing the mist to pass around it for collection.



CHOOSING THE CORRECT ROYAL FILTERMIST UNIT

Sizing Units

The Royal Filtermist is available in four sizes, based on throughput capacities: 300, 575, 900, and 1200 cfm. Royal Products maintains a database with specifications for many different machine tools, and we recommend you contact one of our applications engineers for your specific sizing requirements.



For those who would like a general rule of thumb, we recommend using the following formula to obtain a rough idea of your requirements:

Filtermist Size = Internal Enclosure Volume x 5

For example, suppose you have a small CNC lathe with an internal work envelope measuring 5ft. wide x 3ft. deep x 4ft. high. Multiplying 5x3x4, we see that the machine has an enclosure volume of 60 cu. ft. Multiplying 60x5 we see that 300 cfm is required, so we'd choose the model FX-300.

Although this rule is very simple, it is handy for determining the general size requirements.

If you are not sure which unit to use, please contact your local Royal Filtermist Distributor or one of our applications engineers.

Grinding



Grinding applications can sometimes be more demanding than typical turning and milling applications because grinding produces fine dust particles that become entrained in the mist stream. Over time, this dust can accumulate on the drum pads, resulting in the need for more frequent maintenance. If regular maintenance is not performed and a significant volume of solid matter builds up in the drum, balance and vibration issues may arise.

A simple way to overcome the problems associated with grinding dust is to fit the Filtermist with a cyclonic swarf separator. The separator mounts below the Filtermist unit and uses cyclonic action to separate out the solid matter, leaving the drum free to process the mist and preventing buildup on the pads. A port on the bottom of the unit facilitates drainage.

Royal Products recommends using a cyclonic swarf separator for all grinding applications.



Check out the Royal Filtermist Video at www.mistcollectors.com

CHOOSING THE CORRECT ROYAL FILTERMIST UNIT



Turning



CNC lathes are relatively **easy applications to tackle** because the machines are usually well enclosed and direct mounting is often possible. On any well enclosed machine, it is recommended that the Filtermist intake point be located as far from the machining action as possible so that the mist is drawn from an area of heavy concentration to an area of lighter concentration. On CNC lathes, therefore, the ideal intake location is on the right side of the machine, near the tailstock. On subspindle lathes where the right-hand wall moves along the z-axis, it might be necessary for the Filtermist to have a more central location.

Milling



For enclosed machining centers, the Filtermist intake position should be located in an upper corner of the enclosure. Installation on open-top machines is not as clear-cut. If enclosing the machine is not possible, a successful installation can often be accomplished by **mounting the Filtermist unit above the machine** and running ducting down into the enclosure. It may be necessary to adjust the intake location so that it is close enough to the spindle to collect the mist, yet far enough away to keep chips from being drawn in. A Y-junction may be used to draw mist from both sides of the spindle, and a chip deflector may also come in handy.

High-Pressure Coolant/Oil

More and more machine tools today are equipped with high-pressure coolant systems. Machines running either oil or coolant at high-pressure tend to create a greater volume of mist, with a smaller average particle size. For high-pressure applications, equipping your Filtermist unit with one (or both) of the performance accessories below will greatly help to optimize mist control within your shop.



High-Performance After Filter

This after filter has been specifically engineered for high-pressure coolant and oil applications. Laboratory and field performance tests have shown the service life to be as great as 10x that of a standard after filter.



Cyclonic Swarf Separator

While this accessory was originally designed to remove solid particulate entrained in the mist steam, it has also proven to be very effective as a pre-filter in high-pressure applications by removing much of the mist prior to the impaction process.

If you have any questions regarding the use of these performance accessories in your high-pressure applications, please contact Royal Products at 1-800-645-4174 to schedule a visit by one of our factory-trained mist control experts.



ROYAL FILTERMIST EFFICIENCY

When evaluating the effectiveness of any mist collection system, two major aspects must be considered:

- The unit must be capable of handling the full volume of mist produced by the application.
- The unit must be efficient at capturing particles of all sizes.

Independent testing has proven the Royal Filtermist FX Series to be very effective at handling large volumes of mist and highly efficient at dealing with the full spectrum of particle sizes found in typical metalworking mist concentrations.

While a typical metalworking mist concentration is made up of many different-sized particles, usually 80–90% of these particles are larger than one micron in size, and fewer than 10% of the particles are smaller than 0.5 micron in size.

In order to effectively eliminate mist, the Royal Filtermist incorporates a two-phase process:

1. The first phase utilizes the mechanical process of centrifugal impaction. This centrifugal impaction process is the heart of the Filtermist's operating principle and it is highly effective at handling large volumes of mist.

The centrifugal impaction process is **almost 100% efficient at handling particles larger than one micron**, which tend to make up the bulk of the mist. When considering a weighted average of the particle size in a typical metalworking mist concentration, overall efficiency of the impaction process is roughly 98%.

2. Many may consider an efficiency of 98% to be adequate for their needs. However, if additional efficiency is required, the Royal Filtermist FX Series units may be equipped with an after filter to handle the small amount of residual mist that bypasses the impaction process. Royal after filters use a carefully selected grade of media that provides an effective balance between being **fine enough to capture the smallest of particles** while still allowing the filter to enjoy a comparatively long service life. **Overall efficiency of a Royal Filtermist FX Series unit equipped with an after filter exceeds 99.5%.**

OSHA and NIOSH Standards

The OSHA and NIOSH limits on airborne mist particles are currently set at 5mg/m³. It is believed that in the coming years this level will be reduced by a factor of ten to a new level of 0.5 mg/m³. The Royal Filtermist FX is so efficient that when equipped with an after filter, it easily meets not only the current limit, but even the stricter proposed limit.

LOCATION	CONCENTRATION (mg / m ³)
Ambient Shop Air	0.75
FX-1200 Inlet	8.0 – 10.0
FX-1200 Exhaust	0.18

In a recent test carried out by an independent contractor, a Mori Seiki SL75ML was fitted with a model FX-1200 Filtermist unit and after filter. Particle counters were set up to monitor the air at three locations during machining – the ambient shop air, the Filtermist intake, and the Filtermist exhaust. The test results confirm that the Filtermist easily meets the challenge. Particle concentration levels at the Filtermist exhaust were well below 0.5 mg/m³. In fact, the air at **the Filtermist exhaust was four-times cleaner than the ambient shop air!**

IMPORTANT – The Royal Filtermist is designed to help your shop meet current and future air quality standards. It must be understood, however, that there are many variables involved in controlling shop pollution and we cannot guarantee that the Filtermist alone will prevent occupational diseases to workers. It is your responsibility to establish an effective overall industrial hygiene program designed to comply with OSHA and NIOSH standards. If you have any questions regarding this issue, please contact us at 1-800-645-4174.

COMMONLY ASKED ROYAL FILTERMIST QUESTIONS



How Do I Select the Correct Royal Filtermist for My Application?

Page 194 of this catalog contains some basic sizing information, and you are always welcome to speak to one of our engineers at 1-800-645-4174 if you have any questions. We can also arrange to have one of our local regional managers visit your factory to check out your application and make the appropriate recommendations.

How Do I Order?

The Royal Filtermist system is sold in the U.S. through an exclusive network of authorized distributors. To find out who your local Royal Filtermist distributor is, please contact our customer service department at 1-800-645-4174.

How Do Filtermist Units Ship?

All Filtermist FX Series **units can be shipped via UPS**. Due to dimensional limitations, the floor stand must ship by truck. When ordering multiple units, it is often more cost effective to ship by truck.



How Do I Install the Royal Filtermist In My Shop?

The Royal Filtermist is a relatively easy piece of equipment to install, and most shops handle their own installations. Detailed instructions are included with each unit.

To ensure a smooth installation process, be sure you have ordered all of the necessary mounting and performance accessories. Please note that all accessories offered in this catalog have been tested for performance and safety. Substituting accessories with non-Royal items could void the Filtermist warranty, affect performance, and result in dangerous operating conditions.

What About Wiring?



The three-phase Filtermist motor must be wired in conjunction with a motor starter switch, which can be purchased through Royal Products. We suggest you have a licensed electrician perform the wiring of the unit. Detailed instructions can be found in the installation manual that is supplied with each unit.

How Often Do the Drum Pads Need to be Changed?



An important aspect to understand about the Royal Filtermist is that **the drum pads are not filters**. These porous pads are present to slow airflow through the unit, thereby maximizing contact with the drum vanes for greatest overall impaction efficiency.

Because the Royal Filtermist utilizes the mechanical process of centrifugal impaction to eliminate mist, maintenance requirements are minimal. As a result, some customers have reported that they have had units operating for up to five years without ever needing to change the drum pads.

For guidelines regarding Filtermist maintenance, please see page 207.

What Happens If I Have a Problem?

In addition to our large network of authorized distributors, Royal Products employs Regional Business Managers and over **50 factory-trained representatives located throughout the country**. In the event of a problem that cannot be solved over the phone, we will arrange for a local Royal Products representative to visit your factory and work with you towards a solution. We firmly believe that after-sales support is as important as the sale itself, and we are committed to this effort.



ROYAL FILTERMIST MODEL FX-300



- ❑ Used primarily on small, enclosed CNC machines with an internal volume of up to 80 cu. ft.
- ❑ Large 6" dia. intake results in a **very low intake velocity**, reducing the likelihood that chips and large droplets will be drawn into the unit.
- ❑ The model FX-300 comes complete with a collar seal, mounting hardware, and 5 ft. of coolant return hose.
- ❑ Designed primarily for direct-mounting to the top of a machine, but stands and brackets are also available for applications where direct-mounting is not possible.
- ❑ Stainless steel model (type 304) available for special applications such as food processing and aqueous parts washers.
- ❑ **A great option for Swiss machines** when used in conjunction with our high-performance after filter.

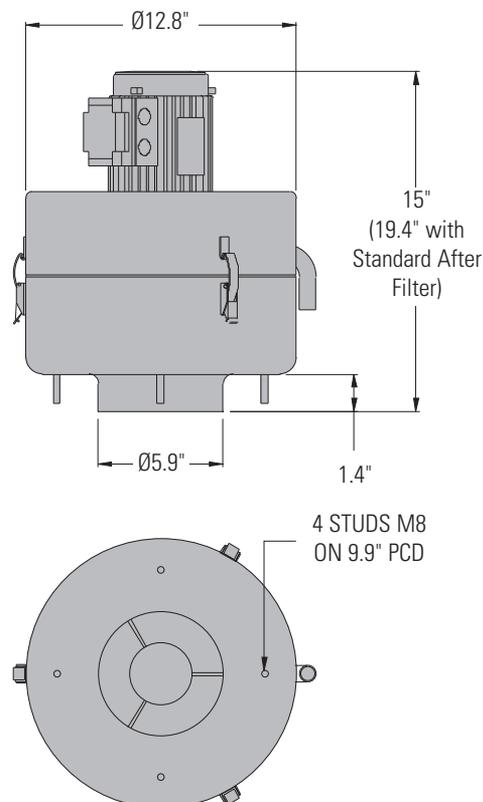


FX-300 Specifications

Airflow	295 cfm
Fits machines with enclosure volume of:	Up to 80 cubic feet
Motor	3/4 HP (0.55 kW), 3-Phase, 50/60 Hz. (208/230/460V)
Weight	31 lbs.
Noise Level	65 dBA
Inlet Diameter	6"

Mounting Options — FX-300

Direct Mount	Hardware included with Filtermist Unit
Floor Stand	use 30316 – Floor Stand "A"
Machine Top Stand	use 30319 – Machine Top Stand "A"
Wall Mount	use 30328 – Wall Bracket "A"
Machine Side Mount	use 30330 – Side-Mount Bracket "A"
Universal Plenum	use 30321 – Universal Plenum



ROYAL FILTERMIST MODEL FX-300



FX-300 Filtermist Units

DESCRIPTION	PART NUMBER	PRICE
 FX-300 Filtermist Unit Includes collar seal and all necessary hardware to mount unit directly to the top of a machine. Also includes 5 ft. of coolant return hose.	30105PROMO <i>See Promo on Page 189</i>	\$3,650

DESCRIPTION	PART NUMBER	PRICE
 FX-300 Stainless Steel Unit For special applications such as food processing and aqueous parts washers	30165PROMO <i>See Promo on Page 189</i>	\$7,540

FX-300 Mounting Accessories

DESCRIPTION	PART NUMBER	PRICE
 Side Mounting Bracket "A" Allows unit to be mounted to the side of a machine tool. Includes hardware and chip deflector.	30330	\$522
 Floor Stand "A" Fixed height of 6 ft. Bolts to floor for safety.	30316	\$910
 Standard Machine Top Stand "A" 28" tall stand bolts to the top of a machine	30319	\$575
 Mini Machine Top Stand "A" 9-1/2" tall.	30311	\$406
 Wall Bracket "A" For mounting unit to a wall or side of a machine.	30328	\$286
 Universal Plenum Convenient accessory for machine-top or chip conveyor mounting. 6" intake dia.	30321	\$1,135
 Coolant Return Hose 3/4" diameter. Note: Also included with unit. See description.	30335	\$9/ft.

DESCRIPTION	PART NUMBER	PRICE																		
 Ducting Flexible vinyl with heavy wire support.	8" 30344 6" 30342 4" 30340	\$33/ft. 23/ft. 18/ft.																		
Warning — never use sheetmetal ducting or any other type that could leak and cause a hazardous condition.																				
 Ducting Clamps For securing ducting to accessories	8" 30354 6" 30352 4" 30350	\$11 11 10																		
 Y-Junctions For multiple pickup locations.	<table border="1"> <tr> <td>A</td> <td>B</td> <td></td> </tr> <tr> <td>8"</td> <td>6"</td> <td>30368</td> </tr> <tr> <td>8"</td> <td>4"</td> <td>30366</td> </tr> <tr> <td>6"</td> <td>6"</td> <td>30364</td> </tr> <tr> <td>6"</td> <td>4"</td> <td>30362</td> </tr> <tr> <td>4"</td> <td>4"</td> <td>30360</td> </tr> </table>	A	B		8"	6"	30368	8"	4"	30366	6"	6"	30364	6"	4"	30362	4"	4"	30360	\$553 685 499 475 399
A	B																			
8"	6"	30368																		
8"	4"	30366																		
6"	6"	30364																		
6"	4"	30362																		
4"	4"	30360																		
 Flange Adapters For securing ducting directly to an enclosed machine.	8" 30374 6" 30372 4" 30370	\$122 113 113																		
 Reducers	<table border="1"> <tr> <td>A</td> <td>B</td> <td></td> </tr> <tr> <td>8"</td> <td>6"</td> <td>30382</td> </tr> <tr> <td>6"</td> <td>4"</td> <td>30380</td> </tr> </table>	A	B		8"	6"	30382	6"	4"	30380	\$217 217									
A	B																			
8"	6"	30382																		
6"	4"	30380																		
 Fishtails For use on open machines.	<table border="1"> <tr> <td>A</td> <td>B</td> <td></td> </tr> <tr> <td>8"</td> <td>11.75" x 5"</td> <td>30394</td> </tr> <tr> <td>6"</td> <td>10" x 4.5"</td> <td>30392</td> </tr> <tr> <td>4"</td> <td>8.25" x 3.5"</td> <td>30390</td> </tr> </table>	A	B		8"	11.75" x 5"	30394	6"	10" x 4.5"	30392	4"	8.25" x 3.5"	30390	\$386 358 330						
A	B																			
8"	11.75" x 5"	30394																		
6"	10" x 4.5"	30392																		
4"	8.25" x 3.5"	30390																		

FX-300 Performance Accessories

DESCRIPTION	PART NUMBER	PRICE
 Standard After Filter "A" Used for collecting dry smoke and very fine mist particles.	30200 <i>See Promo on Page 189</i>	\$412
 High-Performance After Filter "A" Designed for high pressure and Swiss applications. Extended operating life over standard after filter.	30203	\$1,095
 Chip Deflector "A" Protects intake from coolant splash and chips.	30222	\$111

FX-300 Electrical Accessories

DESCRIPTION	PART NUMBER	PRICE
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector	FX-300 & 575 Low-Voltage (208/230V) 30470 FX-300 & 575 High-Voltage (460V) 30471	\$755 \$755



Try a unit on your toughest application risk-free! See Page 189.



ROYAL FILTERMIST MODEL FX-575



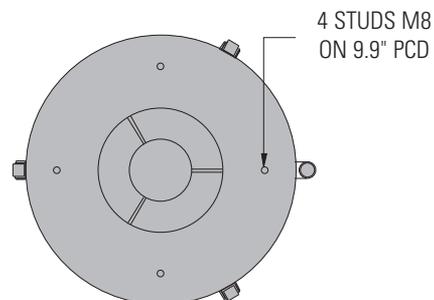
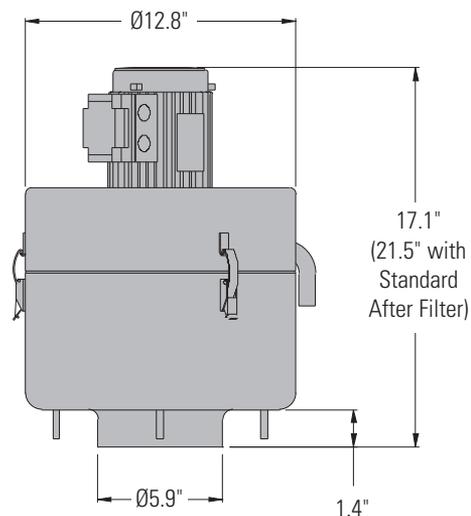
FX-575 Specifications

Airflow	560 cfm
Fits machines with enclosure volume of:	60–120 cubic feet
Motor	3/4 HP (0.55 kW), 3-Phase, 50/60 Hz. (208/230/460V)
Weight	35 lbs.
Noise Level	67 dBA
Inlet Diameter	6"

Mounting Options — FX-575

Mounting Option	Hardware included with Filtermist Unit
Direct Mount	
Floor Stand	use 30316 – Floor Stand "A"
Machine Top Stand	use 30319 – Machine Top Stand "A"
Wall Mount	use 30328 – Wall Bracket "A"
Machine Side Mount	use 30330 – Side-Mount Bracket "A"
Universal Plenum	use 30321 – Universal Plenum"

- For use on enclosed machines with an internal volume between 60 cu. ft. and 120 cu. ft.
- Designed primarily for direct-mounting to the top of a machine, but stands and brackets are also available for applications where direct-mounting is not possible.
- Stainless steel model (type 304) available for special applications such as food processing and aqueous parts washers.
- **A great option for Swiss machines** when used in conjunction with our high-performance after filter.



ROYAL FILTERMIST MODEL FX-575



FX-575 Filtermist Units

DESCRIPTION	PART NUMBER	PRICE
 FX-575 Filtermist Unit Includes collar seal and all necessary hardware to mount unit directly to the top of a machine. Also includes 5 ft. of coolant return hose.	30115PROMO <i>See Promo on Page 189</i>	\$4,410

DESCRIPTION	PART NUMBER	PRICE
 FX-575 Stainless Steel Unit For special applications such as food processing and aqueous parts washers	30185PROMO <i>See Promo on Page 189</i>	\$8,330

FX-575 Mounting Accessories

DESCRIPTION	PART NUMBER	PRICE
 Side Mounting Bracket "A" Allows unit to be mounted to the side of a machine tool. Includes hardware and chip deflector.	30330	\$522
 Floor Stand "A" Fixed height of 6 ft. Bolts to floor for safety.	30316	\$910
 Standard Machine Top Stand "A" 28" tall stand bolts to the top of a machine	30319	\$575
 Mini Machine Top Stand "A" 9-1/2" tall.	30311	\$406
 Wall Bracket "A" For mounting unit to a wall or side of a machine.	30328	\$286
 Universal Plenum Convenient accessory for machine-top or chip conveyor mounting. 6" intake dia.	30321	\$1,135
 Coolant Return Hose 3/4" diameter. Note: Also included with unit. See description.	30335	\$9/ft.

DESCRIPTION	PART NUMBER	PRICE																		
 Ducting Flexible vinyl with heavy wire support.	8" 30344 6" 30342 4" 30340	\$33/ft. 23/ft. 18/ft.																		
Warning — never use sheetmetal ducting or any other type that could leak and cause a hazardous condition.																				
 Ducting Clamps For securing ducting to accessories	8" 30354 6" 30352 4" 30350	\$11 11 10																		
 Y-Junctions For multiple pickup locations.	<table border="1"> <tr> <td>A</td> <td>B</td> <td></td> </tr> <tr> <td>8"</td> <td>6"</td> <td>30368</td> </tr> <tr> <td>8"</td> <td>4"</td> <td>30366</td> </tr> <tr> <td>6"</td> <td>6"</td> <td>30364</td> </tr> <tr> <td>6"</td> <td>4"</td> <td>30362</td> </tr> <tr> <td>4"</td> <td>4"</td> <td>30360</td> </tr> </table>	A	B		8"	6"	30368	8"	4"	30366	6"	6"	30364	6"	4"	30362	4"	4"	30360	\$553 685 499 475 399
A	B																			
8"	6"	30368																		
8"	4"	30366																		
6"	6"	30364																		
6"	4"	30362																		
4"	4"	30360																		
 Flange Adapters For securing ducting directly to an enclosed machine.	8" 30374 6" 30372 4" 30370	\$122 113 113																		
 Reducers	<table border="1"> <tr> <td>A</td> <td>B</td> <td></td> </tr> <tr> <td>8"</td> <td>6"</td> <td>30382</td> </tr> <tr> <td>6"</td> <td>4"</td> <td>30380</td> </tr> </table>	A	B		8"	6"	30382	6"	4"	30380	\$217 217									
A	B																			
8"	6"	30382																		
6"	4"	30380																		
 Fishtails For use on open machines.	<table border="1"> <tr> <td>A</td> <td>B</td> <td></td> </tr> <tr> <td>8"</td> <td>11.75" x 5"</td> <td>30394</td> </tr> <tr> <td>6"</td> <td>10" x 4.5"</td> <td>30392</td> </tr> <tr> <td>4"</td> <td>8.25" x 3.5"</td> <td>30390</td> </tr> </table>	A	B		8"	11.75" x 5"	30394	6"	10" x 4.5"	30392	4"	8.25" x 3.5"	30390	\$386 358 330						
A	B																			
8"	11.75" x 5"	30394																		
6"	10" x 4.5"	30392																		
4"	8.25" x 3.5"	30390																		

FX-575 Performance Accessories

DESCRIPTION	PART NUMBER	PRICE
 Standard After Filter "A" Used for collecting dry smoke and very fine mist particles.	30200 <i>See Promo on Page 189</i>	\$412
 High-Performance After Filter "A" Designed for high pressure and Swiss applications. Extended operating life over standard after filter.	30203	\$1,095
 Chip Deflector "A" Protects intake from coolant splash and chips.	30222	\$111

FX-575 Electrical Accessories

DESCRIPTION	PART NUMBER	PRICE
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector	FX-300 & 575 Low-Voltage (208/230V) 30470 FX-300 & 575 High-Voltage (460V) 30471	\$755 \$755



Try a unit on your toughest application risk-free! See Page 189.



ROYAL FILTERMIST MODEL FX-900



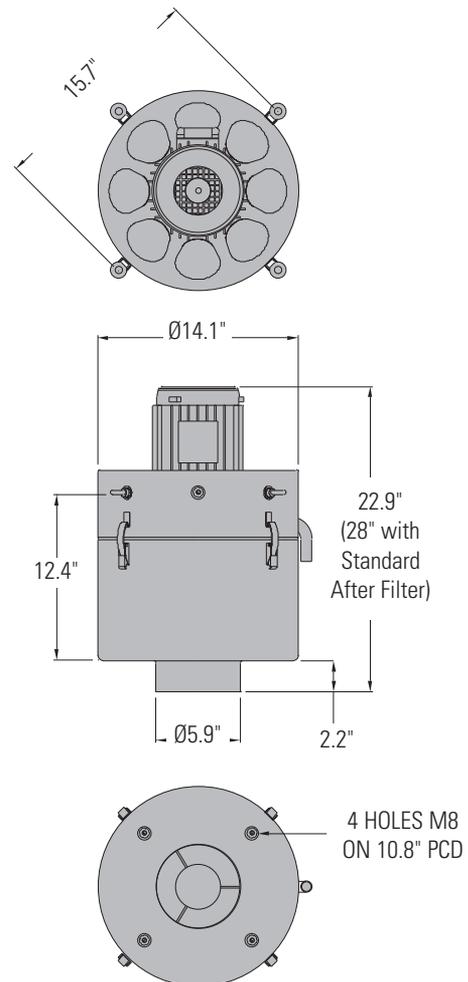
FX-900 Specifications

Airflow	900 cfm
Fits machines with enclosure volume of:	90-180 cubic feet
Motor	3 HP (2.2 kW), 3-Phase, 50/60 Hz. (208/230/460V)
Weight	51 lbs.
Noise Level	70 dBA
Inlet Diameter	6"

Mounting Options — FX-900

Direct Mount	use 30302 – FX-900 Direct Mount Kit
Floor Stand	use 30315 – Floor Stand "B"
Machine Top Stand	use 30314 – Machine Stand "B"
Wall Mount	use 30320 – Wall Bracket "B"
Machine Side Mount	use 30320 – Wall Bracket "B"
Universal Plenum	use 30321 – Universal Plenum

- ❑ For use on enclosed machines with an internal volume between 90 cu. ft. and 180 cu. ft.
- ❑ **Popular for open machines** requiring a Y-junction and two intake points.
- ❑ Unit can be mounted directly to the machine, on stands or on brackets.
- ❑ Stainless steel model (type 304) available for special applications such as food processing and aqueous parts washers.



ROYAL FILTERMIST MODEL FX-900



FX-900 Filtermist Units

DESCRIPTION	PART NUMBER	PRICE
 FX-900 Filtermist Unit Includes 12 ft. of coolant return hose. Order performance and mounting accessories separately.	30120PROMO <i>See Promo on Page 189</i>	\$5,450

DESCRIPTION	PART NUMBER	PRICE
 FX-900 Stainless Steel Unit For special applications such as food processing and aqueous parts washers.	30160PROMO <i>See Promo on Page 189</i>	\$9,495

FX-900 Mounting Accessories

DESCRIPTION	PART NUMBER	PRICE
 Direct Mount Kit (FX-900) Includes 6" collar seal, set of rigid mounting studs, and hardware.	30302	\$149
 Floor Stand "B" Adjusts from 6 ft. to 9 ft. Bolts to floor for safety.	30315	\$1,550
 Machine Top Stand "B" 3 ft. tall stand bolts to the top of a machine.	30314	\$995
 Wall Bracket "B" Can be used to mount unit to a wall or other suitable mounting surface.	30320	\$625
 Universal Plenum Convenient accessory for machine-top or chip conveyor mounting. 6" intake dia.	30321	\$1,135
 Coolant Return Hose 3/4" diameter. Note: Also included with unit. See description.	30335	\$9/ft.

DESCRIPTION	PART NUMBER	PRICE																		
 Ducting Flexible vinyl with heavy wire support.	8" 30344 6" 30342 4" 30340	\$33/ft. 23/ft. 18/ft.																		
Warning — never use sheetmetal ducting or any other type that could leak and cause a hazardous condition.																				
 Ducting Clamps For securing ducting to accessories.	8" 30354 6" 30352 4" 30350	\$11 11 10																		
 Y-Junctions For multiple pickup locations.	<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>8"</td> <td>8"</td> <td>6"</td> </tr> <tr> <td>8"</td> <td>8"</td> <td>4"</td> </tr> <tr> <td>6"</td> <td>6"</td> <td>6"</td> </tr> <tr> <td>6"</td> <td>4"</td> <td>4"</td> </tr> <tr> <td>4"</td> <td>4"</td> <td>4"</td> </tr> </tbody> </table>		A	B	8"	8"	6"	8"	8"	4"	6"	6"	6"	6"	4"	4"	4"	4"	4"	\$553 685 499 475 399
	A	B																		
8"	8"	6"																		
8"	8"	4"																		
6"	6"	6"																		
6"	4"	4"																		
4"	4"	4"																		
 Flange Adapters For securing ducting directly to an enclosed machine.	8" 30374 6" 30372 4" 30370	\$122 113 113																		
 Reducers	<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>8"</td> <td>8"</td> <td>6"</td> </tr> <tr> <td>6"</td> <td>6"</td> <td>4"</td> </tr> </tbody> </table>		A	B	8"	8"	6"	6"	6"	4"	\$217 217									
	A	B																		
8"	8"	6"																		
6"	6"	4"																		
 Fishtails For use on open machines.	<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>8"</td> <td>8"</td> <td>11.75" x 5"</td> </tr> <tr> <td>6"</td> <td>6"</td> <td>10" x 4.5"</td> </tr> <tr> <td>4"</td> <td>4"</td> <td>8.25" x 3.5"</td> </tr> </tbody> </table>		A	B	8"	8"	11.75" x 5"	6"	6"	10" x 4.5"	4"	4"	8.25" x 3.5"	\$386 358 330						
	A	B																		
8"	8"	11.75" x 5"																		
6"	6"	10" x 4.5"																		
4"	4"	8.25" x 3.5"																		

FX-900 Performance Accessories

DESCRIPTION	PART NUMBER	PRICE
 Standard After Filter "B" Used for collecting dry smoke and very fine mist particles.	30205 <i>See Promo on Page 189</i>	\$441
 High-Performance After Filter "B" Designed for high pressure and Swiss applications. Extended operating life over standard after filter.	30204	\$1,180
 Cyclonic Swarf Separator For use on applications such as grinding and cast iron machining where very fine solid particles are entrained in the mist stream. Also acts as a great pre-filter for high pressure coolant applications. Requires 6" dia. ducting.	30210	\$1,480
 Chip Deflector "B" Protects intake from coolant splash and chips.	30220	\$111

FX-900 Electrical Accessories

DESCRIPTION	PART NUMBER	PRICE
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector.	FX-900 & 1200 Low-Voltage (208/230V) 30472 FX-900 & 1200 High-Voltage (460V) 30473	\$755 \$755



Try a unit on your toughest application risk-free!
See Page 189.



ROYAL FILTERMIST MODEL FX-1200



- ❑ For use on enclosed machines with an internal volume of 120 cu. ft. or larger.
- ❑ Popular for machines requiring Y-junction and two intake points.
- ❑ **Excellent choice for large machining centers.**
- ❑ Unit can be mounted directly to the machine, on stands or on brackets.
- ❑ Stainless steel model (type 304) available for special applications such as food processing and aqueous parts washers.

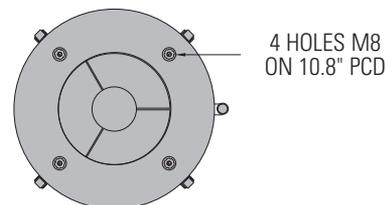
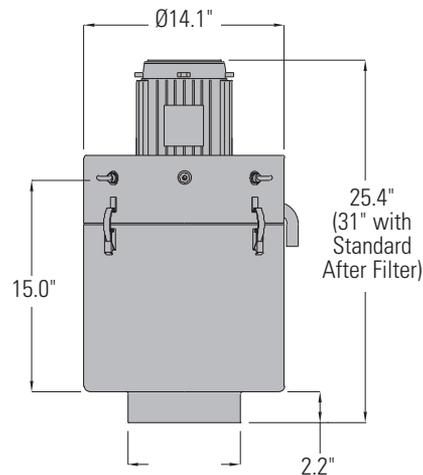
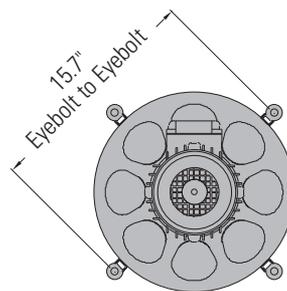


FX-1200 Specifications

Airflow	1200 cfm
Fits machines with enclosure volume of:	120 cubic feet or larger
Motor	3 HP (2.2 kW), 3-Phase, 50/60 Hz. (208/230/460V)
Weight	64 lbs.
Noise Level	72 dBA
Inlet Diameter	8"

Mounting Options — FX-1200

Direct Mount	use 30304 – FX-1200 Direct Mount Kit
Floor Stand	use 30315 – Floor Stand "B"
Machine Top Stand	use 30314 – Machine Stand "B"
Wall Mount	use 30320 – Wall Bracket "B"
Machine Side Mount	use 30320 – Wall Bracket "B"
Universal Plenum	use 30321 – Universal Plenum



ROYAL FILTERMIST MODEL FX-1200



FX-1200 Filtermist Units

DESCRIPTION	PART NUMBER	PRICE
 FX-1200 Filtermist Unit Includes 12 ft. of coolant return hose. Order performance and mounting accessories separately.	30130PROMO See Promo on Page 189	\$5,880

DESCRIPTION	PART NUMBER	PRICE
 FX-1200 Stainless Steel Unit For special applications such as food processing and aqueous parts washers.	30170PROMO See Promo on Page 189	\$10,315

FX-1200 Mounting Accessories

DESCRIPTION	PART NUMBER	PRICE
 Direct Mount Kit (FX-1200) Includes 8" collar seal, set of rigid mounting studs, and hardware.	30304	\$149
 Floor Stand "B" Adjusts from 6 ft. to 9 ft. Bolts to floor for safety.	30315	\$1,550
 Machine Top Stand "B" 3 ft. tall stand bolts to the top of a machine.	30314	\$995
 Wall Bracket "B" Can be used to mount unit to a wall or other suitable mounting surface.	30320	\$625
 Universal Plenum Convenient accessory for machine-top or chip conveyor mounting. 6" intake dia.	30321	\$1,135
 Coolant Return Hose 3/4" diameter. Note: Also included with unit. See description.	30335	\$9/ft.

DESCRIPTION	PART NUMBER	PRICE																								
 Ducting Flexible vinyl with heavy wire support.	8" 30344 6" 30342 4" 30340	\$33/ft. 23/ft. 18/ft.																								
Warning — never use sheetmetal ducting or any other type that could leak and cause a hazardous condition.																										
 Ducting Clamps For securing ducting to accessories.	8" 30354 6" 30352 4" 30350	\$11 11 10																								
 Y-Junctions For multiple pickup locations.	<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>Part No.</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>8"</td> <td>6"</td> <td>30368</td> <td>\$553</td> </tr> <tr> <td>8"</td> <td>4"</td> <td>30366</td> <td>685</td> </tr> <tr> <td>6"</td> <td>6"</td> <td>30364</td> <td>499</td> </tr> <tr> <td>6"</td> <td>4"</td> <td>30362</td> <td>475</td> </tr> <tr> <td>4"</td> <td>4"</td> <td>30360</td> <td>399</td> </tr> </tbody> </table>	A	B	Part No.	Price	8"	6"	30368	\$553	8"	4"	30366	685	6"	6"	30364	499	6"	4"	30362	475	4"	4"	30360	399	
A	B	Part No.	Price																							
8"	6"	30368	\$553																							
8"	4"	30366	685																							
6"	6"	30364	499																							
6"	4"	30362	475																							
4"	4"	30360	399																							
 Flange Adapters For securing ducting directly to an enclosed machine.	8" 30374 6" 30372 4" 30370	\$122 113 113																								
 Reducers	<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>Part No.</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>8"</td> <td>6"</td> <td>30382</td> <td>\$217</td> </tr> <tr> <td>6"</td> <td>4"</td> <td>30380</td> <td>217</td> </tr> </tbody> </table>	A	B	Part No.	Price	8"	6"	30382	\$217	6"	4"	30380	217													
A	B	Part No.	Price																							
8"	6"	30382	\$217																							
6"	4"	30380	217																							
 Fishtails For use on open machines.	<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>Part No.</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>8"</td> <td>11.75" x 5"</td> <td>30394</td> <td>\$386</td> </tr> <tr> <td>6"</td> <td>10" x 4.5"</td> <td>30392</td> <td>358</td> </tr> <tr> <td>4"</td> <td>8.25" x 3.5"</td> <td>30390</td> <td>330</td> </tr> </tbody> </table>	A	B	Part No.	Price	8"	11.75" x 5"	30394	\$386	6"	10" x 4.5"	30392	358	4"	8.25" x 3.5"	30390	330									
A	B	Part No.	Price																							
8"	11.75" x 5"	30394	\$386																							
6"	10" x 4.5"	30392	358																							
4"	8.25" x 3.5"	30390	330																							

FX-1200 Performance Accessories

DESCRIPTION	PART NUMBER	PRICE
 Standard After Filter "B" Used for collecting dry smoke and very fine mist particles.	30205 See Promo on Page 189	\$441
 High-Performance After Filter "B" Designed for high pressure and Swiss applications. Extended operating life over standard after filter.	30204	\$1,180
 Cyclonic Swarf Separator For use on applications such as grinding and cast iron machining where very fine solid particles are entrained in the mist stream. Also acts as a great pre-filter for high pressure coolant applications. Requires 6" dia. ducting.	30210	\$1,480
 Chip Deflector "B" Protects intake from coolant splash and chips.	30220	\$111

FX-1200 Electrical Accessories

DESCRIPTION	PART NUMBER	PRICE						
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector.	<table border="1"> <thead> <tr> <th>Part No.</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>FX-900 & 1200 Low-Voltage (208/230V) 30472</td> <td>\$755</td> </tr> <tr> <td>FX-900 & 1200 High-Voltage (460V) 30473</td> <td>\$755</td> </tr> </tbody> </table>	Part No.	Price	FX-900 & 1200 Low-Voltage (208/230V) 30472	\$755	FX-900 & 1200 High-Voltage (460V) 30473	\$755	
Part No.	Price							
FX-900 & 1200 Low-Voltage (208/230V) 30472	\$755							
FX-900 & 1200 High-Voltage (460V) 30473	\$755							



Try a unit on your toughest application risk-free! See Page 189.



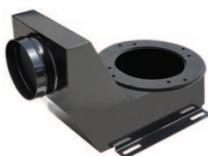
ROYAL EASY-MOUNT™ FILTERMIST PACKAGES

Universal Installation and Simple Single Part Number Ordering



- ✓ This advanced mounting system relocates the intake point to the side of the Filtermist unit for **enhanced installation flexibility**.
- ✓ Enables mounting virtually anywhere on top of the machine tool for **optimal positioning** of both the mist collector and intake location.
- ✓ Single part-number ordering – Royal Easy-Mount™ packages include everything needed for **hassle-free installation**:

- Royal Filtermist Unit
- Chip Deflector
- Coolant Return Hose (12 ft)
- Plenum with drain tube
- 6" Dia. Ducting (8 ft)
- All Required Hardware
- Standard After Filter
- 6" Ducting Clamps
- Extra Set of Drum Pads
- Starter Box Kit
- 6" Flange Adapter



The key to this system is the Royal Plenum, which has been optimized for minimal cfm loss. The plenum also functions as a coarse pre-filter by forcing fines and chips to drop out of the mist stream due to the internal airflow directional change.

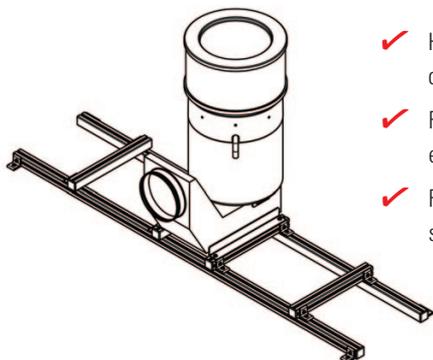
Royal Easy-Mount™ Filtermist Mist Collector Packages

DESCRIPTION	FILTERMIST MODEL	VOLTAGE	INTAKE DIAMETER	PART NUMBER	PRICE
FX-300 Easy-Mount™ Package (Low-Voltage)	FX-300	208/230 Volts	6"	30136	\$5,980
FX-300 Easy-Mount™ Package (High-Voltage)	FX-300	460 Volts	6"	30137	5,980
FX-575 Easy-Mount™ Package (Low-Voltage)	FX-575	208/230 Volts	6"	30138	6,740
FX-575 Easy-Mount™ Package (High-Voltage)	FX-575	460 Volts	6"	30139	6,740
FX-900 Easy-Mount™ Package (Low-Voltage)	FX-900	208/230 Volts	6"	30127	7,790
FX-900 Easy-Mount™ Package (High-Voltage)	FX-900	460 Volts	6"	30128	7,790
FX-1200 Easy-Mount™ Package (Low-Voltage)	FX-1200	208/230 Volts	6"	30132	8,210
FX-1200 Easy-Mount™ Package (High-Voltage)	FX-1200	460 Volts	6"	30133	8,210

Note – Plenum causes approximately 10% cfm loss – please keep in mind when sizing for your application.

Royal Easy-Mount™ Rail Kit

Provides Even Greater Filtermist Mounting Flexibility



- ✓ Heavy-duty rail kit can be used with any Royal Filtermist Easy-Mount™ Package to span openings/voids on top of the machine tool enclosure, making great use of “wasted space” on top of the machine.
- ✓ Rigid 40mm aluminum extrusions provide both **strength and vibration-damping capabilities**. Rails are easily trimmable to the desired length.
- ✓ Rail Kit includes (3) six-foot lengths of 40mm extrusions – two for mounting the plenum and one to make stiffeners. All brackets, end caps, and hardware included for **seamless integration**.

DESCRIPTION	PART NUMBER	PRICE
Royal Easy Mount™ Rail Kit	30323	\$767

ROYAL FILTERMIST MAINTENANCE



One of the most popular features of the Royal Filtermist is the fact that it requires minimal maintenance. Unlike media-type systems and electrostatic units, the Royal Filtermist **works almost as well when it is dirty as it does when it is clean.**

For safety purposes, it is necessary to periodically inspect the main components of the Royal Filtermist for wear or damage, especially if the unit is making loud noises or exhibiting vibration. Additionally, we recommend that these simple inspection/maintenance procedures be carried out every 2,000 operating hours, (every 1,000 hours for more demanding applications):



- ❑ Inspect the drum pads for wear and/or matter buildup that could affect airflow or cause vibration, and replace as necessary. It is important to understand that the pads that line the Filtermist drum are not filters. Their presence slows airflow through the unit, thereby maximizing contact with the drum vanes for greatest overall impaction efficiency. **Some customers report not having to change drum pads in certain applications for periods of up to five years.** While this may or may not be the case in your application, it is important to understand that any visible sign of vibration is often related to solid matter buildup and should be addressed immediately.
- ❑ Inspect and replace the motor mounts and torque limiting straps if worn or damaged.
- ❑ Inspect silencer and replace if worn or damaged. If the silencer is saturated with oil, it is important to investigate the reason why. This could be the result of a clogged oil return channel or incorrect drum rotation. Important – the Filtermist will create suction regardless of

which way the drum spins, but it will only properly collect and return oil mist if the drum is spinning in the proper direction as indicated by the arrow on the housing.

- ❑ Inspect the housing seal and replace if necessary. This is especially important on older series units. The redesigned housing of the Filtermist FX Series virtually eliminates the chance of leakage around the seal area.
- ❑ Check all mounting fixtures such as stands and suspension kits for damage or signs of fatigue. Repair or replace as necessary.
- ❑ Check all other accessories for wear and/or damage (ducting, flange adapters, etc.). Repair or replace as necessary.
- ❑ For your convenience, **Royal Products offers complete maintenance kits for all Filtermist units.** These value-priced kits include a drum pad set, a motor mount set, a silencer, and a housing seal. These items are also available separately.

IMPORTANT – The recommended maintenance schedule and procedures outlined above are meant to serve as a guide for most common Filtermist applications. More detailed information is provided in the Royal Filtermist Installation and Maintenance Manual. When dealing with any equipment of this type, common sense must prevail. Any unsafe conditions pertaining to the Royal Filtermist must be immediately attended to. It is also important to understand that when Royal Filtermist units are used in demanding applications such as grinding or cast iron machining, more frequent maintenance may be required. If you have any questions regarding the maintenance or operation of your Royal Filtermist units, please refer to the Royal Filtermist Installation and Maintenance Manual or contact one of our engineers at 1-800-645-4174.

Maintenance Items

DESCRIPTION	FX-300		FX-575		FX-900		FX-1200	
	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE
Complete Maintenance Kit Complete kit provides a cost savings over individual components. Includes the following: drum pad set, silencer, housing seal, and motor mount set.	30500	\$231 <i>Save \$89</i>	30506	\$266 <i>Save \$76</i>	30402	\$330 <i>Save \$203</i>	30404	\$344 <i>Save \$204</i>
Drum Pad Set	30410	\$57	30416	\$79	30412	\$92	30414	\$107
Silencer	30520	\$127	30520	\$127	30422	\$226	30422	\$226
Housing Seal	30430	\$29	30430	\$29	30432	\$38	30432	\$38
Motor Mount Set	30440	\$107	30440	\$107	30442	\$177	30442	\$177

Visit royalproducts.com for maintenance items for older series Filtermist units.



ROYAL FILTERMIST REPLACEMENT PARTS



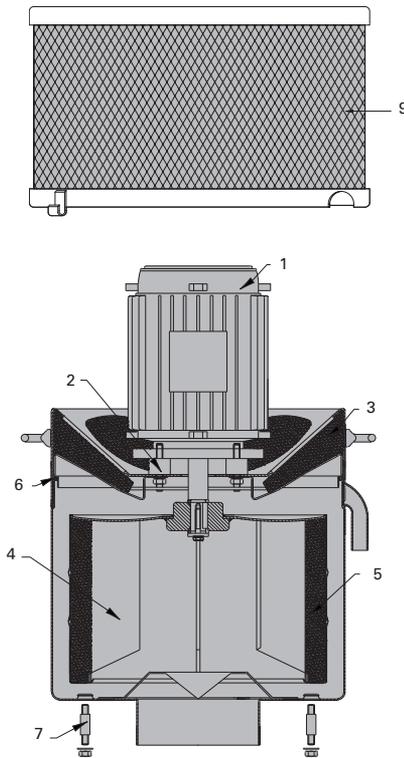
Serial Number Label

On this unit, the white label with the black text indicates a series 8 model.

Royal Products offers a full array of replacement parts for all Filtermist models. When ordering replacement parts, it is very important that you identify the correct series and model. The series is determined by the color of the serial number label, located on the upper portion of the housing near the motor. The color code is as follows:

- Series 6 — Black label, silver text.
- Series 7 — Yellow label, black text.
- Series 8 — White label, black text.
- FX Series — Blue label, white text.

FX Series Only



ITEM NUMBER	DESCRIPTION	FILTERMIST MODEL	BLUE LABEL (FX Series)
1	Motor	FX-275/300	30450
		FX-550/575	30450
		FX-600	30452
		FX-900	30454
		FX-1200	30454
2	Motor Mount Set Includes four mounts and required hardware.	FX-275/300	30440
		FX-550/575	30440
		FX-600	30442
		FX-900	30442
3	Silencer	FX-1200	30442
		FX-275/550	30420
		FX-300/575	30520
		FX-600	30422
4	Drum	FX-900	30422
		FX-1200	30422
		FX-275	30460
		FX-300	30560
		FX-550	30466
5	Drum Pads (set of 4)	FX-575	30566
		FX-600	30462
		FX-900	30462
		FX-1200	30464
		FX-600	30462
6	Housing Seal	FX-275/300	30430
		FX-550/575	30430
		FX-600	30432
		FX-900	30432
7	Direct Mounting Kit Includes collar seal, mounts, and required hardware.	FX-1200	30432
		FX-275/300	30299
		FX-550/575	30299
		FX-600	30300
8	Complete Maintenance Kit Includes items 2, 3, 5 and 6.	FX-900	30302
		FX-1200	30304
		FX-275	30400
		FX-300	30500
		FX-550	30406
		FX-575	30506
9	Complete After Filter Fits over the Filtermist motor. Includes 1-pc. housing/filter element, and toggle clips.	FX-600	30402
		FX-900	30402
		FX-1200	30404
		FX-275/300	30200/30203*
		FX-550/575	30200/30203*

NOTE – The parts on this page are for Filtermist FX Series models with a blue serial number label. If you have an older model Filtermist unit with a white, yellow, or black serial number label, please visit royalproducts.com

*Standard and high-performance models available.

A ROYAL FILTERMIST FOR EVERY APPLICATION

