

# OIL MIST COLLECTOR

**Environmental protection · Energy saving**

It is delicately designed and developed by professional team with large air flow rate, low noise and power saving.

- Oil mist special filter
- Oil mist specially filtered purifier



## Business operation concept of the company

R&D team of Ming Guang Electric CO., Ltd. has devoted itself to continuous research and improvement of its product for a long time with several patents were acquired, meanwhile, it is also a leading brand of the same product in the market.

Since the foundation of this company, its R&D, technology and quality stability enhancement were always conducted based on quality policy of "Take customer as number one and keep continuous improvement".

Our goals are to provide customer with high quality and low cost product, and our service spirit is based on fast delivery and enthusiastic service, meanwhile, we create a new era of competitive advantages of high performance and low cost with customer.

Our company design and manufacture high tech power device to provide customer with stable and precise power drive for our customer. We have precise business operation and management, strict manufacturing process flow, innovative R&D activity, and all-round marketing deployment, etc.; we listen to customer's need, we create R&D trend, we have deep market insight and we seize the future trend, and all the above are core values of Kuang Ming Electric Co., Ltd.

### Integrity principle

Integrity is the most basic and most important concept in us, we are seeking a long term cooperation relationship with customer, and we do not commit arbitrarily just for a purchase order, however, once we committed, we will fulfill our promise.

### Customer oriented

All our decision making and activities are based on a goal to provide our customer better service. We focus on our main business, and we also focus on process technology, product quality and service capability that our customer cares, meanwhile, our mission is to help customer to enhance its competitiveness.

### Sustaining business operation and share of our cooperation

We operate a business with attitude of profession and respect and with spirit of encouraging the application of technology. We also pay great attention to long term strategic planning, and we also care about short term business operation performance. Through continuous improvement of competitive advantage, we help customer to succeed and create profit. Meanwhile, we pursue sustaining operation of this company, and we share the result with our customer, shareholders and employees.

# What is particulate matter?

## Particulate Matter (Abbreviated as PM2.5)

Particulate matter is general name for tiny particle (diameter in the range of 0.001 ~ 10  $\mu\text{m}$ ) floating in the air. And it contains natural and artificial as well as harmful and non-harmful particulate matter. Particulate matter can generate cooling effect, and its net effect on the atmospheric radiation is just opposite that of greenhouse gas.

Natural particulate matter includes volcano ash, dust (which is generated mostly from the desert area of northern Africa and Asia) and sea salt particulate matter, etc. Artificial particulate matter includes industrial dust (which is mostly impurity generated from incomplete combustion), soot, sulfate and nitrate, etc. However, the one that has greatest impact on human health was mist and dust generated from the machine processing and operation. In addition to pollution created to the environment, it also creates serious impact to the machine operator and all the personnel within the plant.

The processing processes of all kinds of machine tools will generate different particulate matters ranging from 0.1  $\mu\text{m}$  to 100  $\mu\text{m}$  depending on the processing characteristics. Among them, dust below 0.4  $\mu\text{m}$  occupies more than 90% of all the dusts, and all these dusts below 0.4  $\mu\text{m}$  can enter human blood through alveolus pulmonis, therefore, it creates serious harm to human health.

## What is the influence of PM2.5 on health?

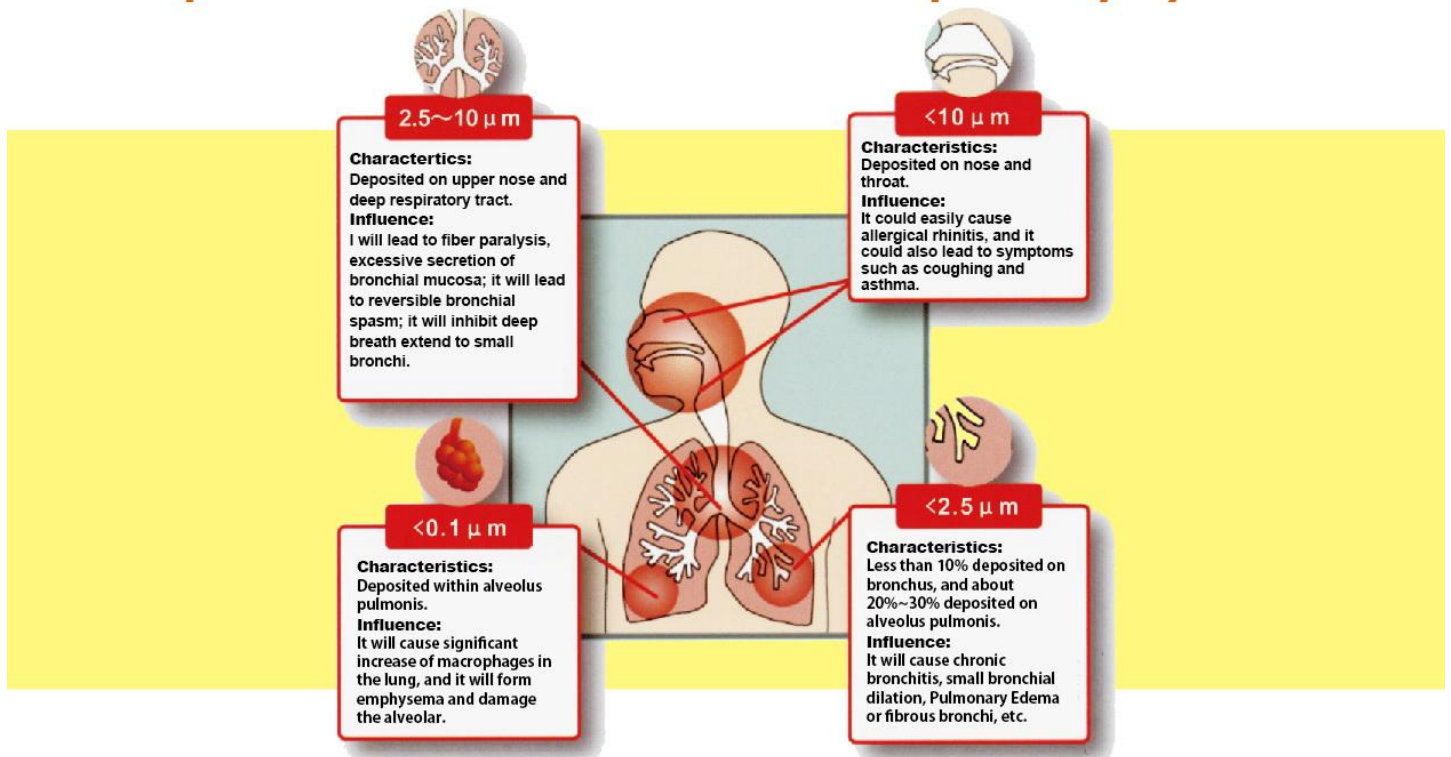
Particulate pollutant is one of the main causes for causing bad air quality in Taiwan area, and particulate pollutant in the atmosphere, in addition to affecting air quality, will also create harmful effect to human health. It can enter human body through nose and throat through respiratory action.

Short term exposure might lead to cardiovascular disease, and long term exposure can affect fetal development or even lead to chronic respiratory disease and lung cancer. It might cause the following disease risks: allergy, asthma, emphysema, lung cancer, cardiovascular disease, liver cancer, blood disease, premature delivery of a baby and the increase of mortality rate.

## INFLUENCE OF FIST AND DUST



# The influence of distribution of different diameters particulate matters on the respiratory system



***PM2.5 is invisible by naked eye, however, it always exists around you and me***

There are many pollutants in the air, and those floating in the air and similar to dusts are called particulate matters. Particulate matters have different diameters, and those particulate matters with diameter smaller than 2.5 μm are called fine particulate matters (PM2.5).

Air quality particulate matter is named PM in English. It has diameter smaller than fine sand in the beach of about 90 μm, human hair of 60 μm, pollen and mold of 30 μm and dust of 10 μm. The diameter of PM is only 2.5 μm.

Because of its small diameter, it can penetrate the clothes to get to the skin. The outer hydro-lipidic film of stratum corneum of skin is specifically easily affected, therefore, once the protection film formed by sebaceous gland and sweat gland is damaged by particulate matter PM2.5, it is like that the tender skin is lack of one protection film, it not only causes sneezing, but also is the killer of dry skin. Pollutants in Taiwan continue to accumulate and affect the environment, the PM2.5 at middle Taiwan is especially high, the street and farm is like to be Puli of Nantou county, which was evaluated as a place most suitable for living, the air quality has a red light, and it even reached the worst level of "purple" level.



## PM2.5 air quality standard

Environmental Protection Agency, on May 14, 2022, has announced an amendment of air quality standard, which has added PM2.5 air quality standard. Meanwhile, based on domestic health influence research result, the health influence is taken into account as first priority to make PM2.5 daily average concentration as 35 ug/m<sup>3</sup> and PM2.5 annual average concentration as 15 ug/m. Environmental Protection Agency, for the initial step, plans to reach, in 2020, annual average value of national particulate matter concentration of 15 ug/m. Meanwhile, it will follow international control development trend to review term by term domestic PM2.5 air quality standard, meanwhile, the final air quality standard made by WHO of daily average concentration of 25 ug/m<sup>3</sup> and annual average concentration of 10 ug/m<sup>3</sup> will be set up as a goal for air quality improvement.

## Particulate Matter (PM2.5) index reference table and activity suggestion

Index rating	1	2	3	4	5	6	7	8	9	10
Classification	low	low	low	medium	medium	medium	high	high	high	Very high
PM2.5 concentration (ug/m <sup>3</sup> )	0 - 11	12 - 23	24 - 35	36 - 41	42 - 47	48 - 53	54 - 58	59 - 64	65 - 70	>71
Activity suggestion for sensitive group	Normal outdoor activity			When adults and children with heart, respiratory tract and cardiovascular disease feel the symptoms, they should consider reducing physical power consumption, especially reducing the outdoor activity.			1 When adults and children with heart, respiratory tract and cardiovascular disease feel the symptoms, they should consider reducing physical power consumption, especially reducing the outdoor activity. 2 Elder people should reduce physical power consumption. 3 People with asthma might need to increase the frequency of use of inhalation.		1 When adults and children with heart, respiratory tract and cardiovascular disease feel the symptoms, they should consider reducing physical power consumption, especially reducing the outdoor activity. 2 People with asthma might need to increase the frequency of use of inhalation.	

In Taiwan, when autumn and winter come, due to the influence of northeast monsoon and smog from China, waste gas emitted by plants in China will generate cancer-induced PM2.5 particulate matter to be blown to Taiwan, therefore, to give early alarm.

**Environmental protection agency: National area air quality report: please check [ppt.cc/LDnR](http://ppt.cc/LDnR)**

環境保護署: 全国各地域の空気品質予報---[ppt.cc/LDnR](http://ppt.cc/LDnR)まで調べてください。

Air quality standard		WHO				European Union	USA		Canada	Australia	Japan	South Korea	Hong Kong	China		Thailand	Taiwan
		IT-1	IT-2	IT-3	AQG		Federation	California						First rating	Second rating		
PM10 (μg/m <sup>3</sup> )	Annual average	70	50	30	20	40	—	20	70	—	—	50	55	40	70	50	65
	Daily average	150	100	75	50	50	150	50	120	50	100	100	180	50	150	120	125
PM2.5 (μg/m <sup>3</sup> )	Annual average	35	25	15	10	25	12	12	—	8	15	25	35	15	35	25	15
	Daily average	75	50	37.5	25	—	35	—	30	25	35	50	75	35	75	50	35

## Product design concept

Waste gas, dust and noise generated from processing and manufacturing of mechanical parts will all create pollution to the environment. Therefore, "clean manufacturing" is the common goal pursued by modern processing enterprises. For the central area of each city in Taiwan, it is prohibited to set up enterprise with serious pollution, meanwhile, processing equipment such as CNC lathe, milling machine and grinder will generate dust and toxic gas that will harm human body, for example, hazardous gases such as Al, Hg and polychlorinated biphenyl, which have serious harm to human body, meanwhile, the generated smoke and mist can last a long time, along with strengthening of environmental awareness and the increase of attention on the vocational disease of the operator, currently, pure adoption of exhaust equipment in the industry is difficult to solve the harm brought about by smoke and mist on human body and environment.

This company, to cope with the demand from market and environment, has hired professional R&D team and used professional manufacturing equipment. Both manufacturing equipment and environmental protection equipment of this company are precisely planned, meanwhile, specially filtered oil mist collector has adopted a combination of Japan-imported filter material such as Japan-imported fiber glass net, chemical fiber, oil mist separation net, oil rough filtering sponge, protection net, stainless steel wire knitting net, synthetic fiber net and active carbon fiber net. Moreover, the oil mist collector design has adopted world's environmental organization standard, and several innovative patent designs have been acquired so as to optimize oil and mist filtering and recycling effect, consequently, the effective interception rate reached can be as high as over 99.9%.

## Features of products of this company

In addition to capturing nano dust and toxic substance, it can also recycle and re-use oil mist in the air, through the interception of oil mist, dust, toxic gas and odor, the effect of air purification in the work environment can be reached. Therefore, work environment of higher function, higher efficiency and best comfort can be reached. Features of products of this company are:

- (1) Strict QC
- (2) Its operation can meet the trends of technology-orientation and computerization
- (3) It brings higher work efficiency to technical personnel
- (4) On-time delivery could also bring more competitive advantages to your business.

Meanwhile, the use of our company's product could bring you advantages as follows:

- (A) It can reduce industrial accident.
- (B) It can reduce hidden disease to human body.
- (C) It can reduce the consumption of cooling liquid.
- (D) It can create more comfortable work environment.
- (E) It can purify the quality of work environment.

### Specially filtered oil mist collector: Features of ARK series

- High efficiency, compact size and easy to be installed in tiny space or machine.
- Low malfunction rate, easy for maintenance, and the pre-filter can be cleaned repeatedly.
- It is easy to install, and it can be extensively used all sites that might generate oil mist.
- It can absorb oil mist of 0.3 um and the efficiency is as high as 99.9%, after filtering and purification, it can be recycled and re-used.
- It is delicately designed and developed by a professional team, motor can have its perfect performance, in addition, its air flow rate is high, it is of low noise and it is very power saving.

### *It can intercept the iron scrap and impurity generated from pollution source, and it can reach optimal performance of pre-filtering.*

- Unique cylinder specially filtered machine design patent
- As compared to general model, it has a pre-filter for cleaning.
- Filter is of imported material to reach effective filtering result.
- It can intercept oil mist with efficiency as high as 99.9%.
- Oil mist separation design can reach world environment organization standard.
- Voltage selection available: 220 V/380 V.



06

# Optional table

It has adopted a combination of Japan-imported fiber glass net, chemical fiber net, oil water separation net, oil rough filtering sponge, protection net, stainless steel wire knitting net, synthetic fiber net and active carbon fiber net.



Specially filtered oil mist collector (600mm/300mm)

## A.Environmental protection recycling

Actual recycling rate 99%.

## B. Energy saving and carbon reduction

For the same spec in the industry, our machine can save half of the electricity fee.

1000W=1KW, and 1KWH = 1000W consumed in each hour, which is equal to 1 degree of electricity.

Total price of power consumed

=

Total KWH consumed x price of each KWH from power company.

## C. Air purification

It has reached national standard.

## Oil mist spec table

Product model number	ARK-15	ARK-25	ARK-35
Horsepower	0.2KW	0.4KW	0.75 KW
Voltage	3ψ 220V / 380V 50 / 60Hz		
Rotational speed	3400rpm	3400rpm	3400rpm
Air flow rate	20 / 22	27 / 29	33 / 36
Static pressure value	1.70 / 2.05	1.91 / 2.35	2.02 / 2.83
Noise value	67 / 72	71 / 74	72 / 76
Suck-in diameter	6" (148mm)	6" (148mm)	6" (148mm)



Standing leg



# Dry dust collector



## Automatic dust-removing filtering tank



## Dry dust collector

### Spec table of dry dust collector

Product model number	AG-008		AG-012	
	Motor	3HP / 60HZ	2.25KW / 50HZ	5HP / 60HZ
Air flow rate	2500 CFM		3800 CFM	
Static pressure value	14.5 InH2O		18.9 InH2O	
Size of air inlet	8" × 4" × 2Hole position		8" × 4" × 3Hole position	
Diameter of filter tank	500MM		500MM	
Height of filter tank	500MM		500MM	
Capacity of dust collection tank	32gallon		32gallon	
Noise value	80dB		82dB	
Area occupied (LxWxH)	950 × 750 × 1900 mm		930 × 790 × 2040 mm	
Net weight	197kgs		230kgs	

# Characteristics of dry dust collector

1. Automatic dry dust collector is of suck-in design.
2. Automatic dry dust collector can perform automatic dust scraping, when dust-containing waste gas passes through porosity of the filtering tank, dust particles will be captured on the fiber of the filtering tank, and clean air passing through the filtering tank will be exhausted through exhaust device. Meanwhile, dust deposited on the surface of filtering tank will be scraped to dust collection funnel to finish forward and reverse dust scraping action, through this reciprocating action, dust filtering purpose can be achieved, and the dust recycling rate can be above 90%.

## Characteristics of dry dust collector

1. Automatic dust scraping design.
2. It is equipped with high efficiency blower.
3. It has diversified models, and it can be optimized with other equipment.
4. It is not needed to be equipped with compressor system.

## Applicable environment fields

1. Dry processing dust.
2. Medium and small quantity dust.
3. Physical property of dust is simple.
4. Automatic scraping of dust.
5. High filtering precision is applicable to fine dust.
6. It is applicable to all kinds of dust processing plants.



# Accessory table



**Pre-filter**



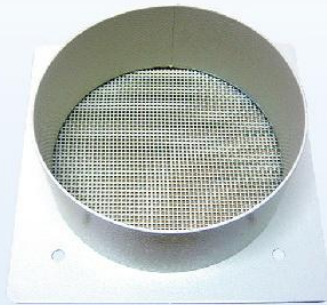
**Specially made high performance oil filtering cotton**



**Flexible wind pipe**  
Inner diameter:152mm  
Outer diameter:162mm



**Flexible wind pipe connector**



**Sheet metal air-suction inlet**



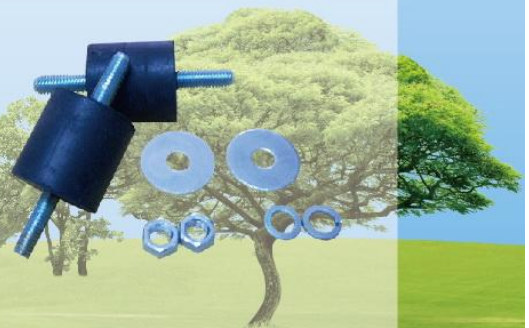
**Stainless steel tube bundle 6"**



**Oil return tube**



**Button switch**



**Vibration-absorbing screw pad**



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