Overview of Water / Wastewater Treatment and Recycling Equipment

Human being draws water as life essential from water bodies such as rivers, lakes and springs. When fewer people lived in a vast land during earlier time, water was plentiful and easy to obtain. Recent progressive civilization, land development, clustering and urbanization, agricultural and animal husbandry as well as business and industrial activities, however, have led pollution to water. While advancement in business and industrial activities demands a higher quality water supply, at the same time it also generates wastewater which further deteriorates the environment, necessitating a sophisticated wastewater treatment. Moreover, the fast economic development has caused water supply shortage problems. As a result, water conservation becomes critical, which evolves into the need to reuse and recycle water. With increasing water cost, water conservation as well as water reuse and recycle have now emerged as an important and integral part of all economic activities. It is further noted that, Taiwan has unique geological features of short rivers and few lakes, making it difficult to store natural water. Water resource development in most cases tends to fall behind economic progress. Effective and efficient use of available water resources has thus become a critically important practice.

I. Water and Wastewater Treatment Technology

The water treatment technology can be classified in two major categories, i.e. water treatment and wastewater treatment. Both use physical, chemical and biological processes to remove the undesirable substances or pollutants to achieve the objective of purified water quality. Generally speaking, the treatment can be carried out in a combination of pre-treatment, primary treatment, secondary treatment and advanced treatment. The choice and selection of combined technologies depend on the raw water characteristics, desired final water quality as well as economic considerations.

Water use can be either domestic or industrial. The treatment equipment usually includes raw water pumping, grit removal, coagulation, sedimentation, filtration, softening, demineralization, ultra purification, sludge management, chemical dosing, pipe networking and system control.

For wastewater treatment, the raw wastewater can be of either industrial or municipal sources. The treatment technology can also be used to remediate groundwater pollution, ocean and port pollution, as well as reservoir and lake pollution. The equipment generally includes bar screen,
grit removal, oil and grease removal, sedimentation, filtration, biological treatment, sludge dewatering, chemical dosing, and advanced treatment. Classification of commonly used water and wastewater treatment technology and equipment is shown in Figure 1.

II. Commonly Water and Wastewater Treatment Equipment

1. Preliminary Treatment

Preliminary treatment covers removal of large suspended solids and heavy inorganic particulates through mechanical bar screening, gravitational sedimentation and flotation, to enable the subsequent units perform the designed functions. Commonly used preliminary treatment equipment includes bar screen, fine particle sieving, grit chamber, pre-aeration, grease well, scraping chamber, etc.

2. Primary Treatment

Primary treatment uses physical sedimentation or flotation to remove the majority of water-borne settleable substances, or 40 - 60% of suspended particles. When coagulants are applied, colloidal substance can also be removed. The primary treatment equipment consists of primary clarifier, flotation chamber, chemical coagulation and sedimentation, as well as special clarifier, e.g. inclined plate sedimentation, double-layer sedimentation. Domestic companies are capable of manufacturing equalization equipment, primary clarifier, dissolved air flotation (DAF) equipment, mixer, aerator, diffuser, etc.

3. Secondary Treatment

Secondary treatment refers to the biological process that grows microorganisms in a controlled manner, and uses them to degrade organic substances in the wastewater, to be followed by separation of microorganisms from the treated liquid and blowing down the excess sludge, to achieve the objective of water purification. The biological treatment can be either aerobic or anaerobic. Aerobic systems include contact aeration, trickling filter and rotary biological disc, etc. while anaerobic systems consist of up-flow anaerobic sludge blanket reactor. Whether aerobic or anaerobic, domestic companies are capable of manufacturing most of the equipment types, for which the technologies are well developed in Taiwan.
4. **Advanced Treatment**

Advanced treatment refers to the process that further removes nitrogen, phosphate, solids, ion, color and odor from the biologically treated effluent as well as to conduct disinfection. Advanced treatment is also called “Tertiary Treatment”.

4.1 **Nitrogen Removal**: to remove nitrogen from wastewater using biological nitrification, biological de-nitrification, biological nitrification/de-nitrification, chlorination and ion exchange, etc.

4.2 **Phosphate Removal**: to remove phosphates from wastewater using biological phosphorus removal, chemical precipitation and combination of biological and chemical processes, etc.

4.3 **Solid (Colloid) Removal**: to remove suspended and dissolved solids. Suspended solids include fine particles and colloids which cannot be removed efficiently by gravitational sedimentation. They are removed by using centrifuge, dissolved air flotation (DAF), diatomaceous earth filtration, coagulation sedimentation plus rapid sand filtration, while dissolved solids are removed by ion exchange, ultra-filtration, activated carbon adsorption, and chemical oxidation.

4.4 **Ion Removal**: Commonly removed by ion exchange, electro-dialysis, reverse osmosis, freezing, evaporation and distillation.

4.5 **Color and Odor Removal**: Commonly removed via oxidation and activated carbon adsorption.

5. **Recovery and Reuse Equipment**

Recently, domestic and industries have begun emphasizing the effective reuse of water resources. In addition to reducing wasteful water consumption in the production system, the wastewater effluent is also recycled and reused after treated by advanced treatment systems such as MF, UF, NF and RO.

6. **Pumping and Other Equipment**

Commonly used pumping equipment can be classified into: centrifuge, vortex, axial, reciprocal, vacuum type, and screw types. For pumping sludge, centrifuge, vortex, screw type and plunger are often used. The domestic companies are skillful in forging, foundering, lathing and planning, and thus can produce equipment of high quality.
Figure 1: Classification of Commonly Used Water and Wastewater Treatment Technology and Equipment
### LFC FAN-FREE COOLING SYSTEM

#### 1. Structure and Principle

(1) The system is a jet-flow semi-closed cooling tower without mechanical driving apparatuses like fan or motor. This system does not rely on external power to achieve cooling.

(2) This system uses a jet-flow unit nozzle to trigger hot water dynamics, converting the heat into pressure differentiation that draws external air into the tower for heat exchange to attain cooling.

(3) Once the spray mist settles, the collected water undergoes a second heat exchange with fresh air inducted from the bottom and then stored for recycle.

#### 2. Purpose

(1) For cooling air-con circulation water.

(2) For industrial manufacturing that requires temperature reduction.

#### 3. Features

(1) Ultra low-noise, no vibration, environmentally conscious.

(2) Free of conventional cooling towers’ and mechanical and electromagnetic noises, the equipment is built of static components. Except for water sound during operation, it produces no noise and no co-oscillation effect - complies with noise control requirements.

(3) Water saving, free of public hazards.

(4) For the low ventilation rate, it is designed with an effective water/gas separator that curtails splatter loss to merely 0.001-0.009%, yielding considerable saving in water and deterrent of splatter accumulation that causes fungus, algae growth that pose public health hazards.

(5) Excellent thermal dynamics.

(6) Low maintenance cost, no consumable parts, requires minimum maintenance (keeping the circulation water clean).

#### 4. Specification and Functions

(1) Fitted with patented diffuser, arc plate.

(2) Equipped with 5-fold high-efficiency water and gas separation stopper.

(3) Facilitate multi-set jet pipes and high-density nozzle according to client treatment volume.

(4) Patented in many nations.

#### 5. Product Photo
CONTINUOUS SAND FILTERING EQUIPMENT

1. Structure and Principle
Pump raw water into sand filter; uniformly distributed to sand layer over diverter and flow upward to pass through filtering sand layer. The filtered clean water flows out of this equipment through overflow weir. SS and impurities screened by filtering bed are dawn up to top of this equipment along with filtering sand to get cleanup. The operation theorem is that when sand drop down from sand washer, apply the relative speed of flush water flowing upward to flush clean the attached dirty matters and push them up to the wastewater drainage weir and drain out from this equipment. The up-flow filtering process and continuous sand-washing capability can keep raw water shortly touch the dirty sand layer, preventing dirty matters from penetrating through the sand layer and pollute water quality.

2. Purpose
(1) Filter underground water.
(2) Filter circulated landscape water.
(3) Filter wastewater effluence.
(4) Filter recycled wastewater.
(5) Filter circulated cooling water.
(6) Filter surface water.

3. Features
(1) No backwash pump required; no need to shutdown while backwashing filtration sand.
(2) Flow-type sand bed, no need to change sand frequently.
(3) Easy to operate; since no aux. device applied, simple in maintenance.
(4) Can treat high SS concentrated raw water.
(5) Low backwash water consumption (about 5% of treated water) as compares to 20% by conventional screening program.

4. Product photo
CJAS SCRAPER
AUTOMATIC FILTER

1. Structure and Principle
   The scrapers work with a speed reducing motor to clean the impurities off the surface of the screen. The scraped impurities settle at the purge chamber and discharged by both Timer and Press difference detector.

2. Purpose
   It’s used in the in-line processing in the industries which need to handle high processing amount and constantly filtering.

3. Features
   (1) Automatic control system.
   (2) Cleaning time and impurity discharging time can be set in advance so that the equipment can keep good working efficiency.
   (3) We use European stainless steel wedge wire screen which are perfectly filtering and not easily broken.

4. Product Photo

CJD DOUBLE FILTER

1. Structure and Principle
   Making parallel connection of 2 sets of single filter and work in a “One in use, one in backup” system. Under normal filtering conditions on 1 set of single filter process, but when the filter in use is found clogged or decreased capacity, the clients should turn on the backup filter to keep on the filtering work and turn off the clogged filter to clean it. Through the repeating procedure, it can achieve the constant filtration.

2. Purpose
   For the filtering work in industries.

3. Features
   (1) Fast installation and uninstallation; easy to clean.
   (2) ”One in use, one in backup” system; constant filtering.
   (3) We use European stainless steel wedge wire screen which are perfectly filtering and not easily broken.

4. Product Photo
1. **Structure and Principle**
   The design of this model can parallel connect by using a set of two or more single filters and manual ball valves, and clients can choose how they want to collocate filters to fit their needs by the processing amount or the tube diameter. Even if one or more sets of filters become clogged or the filtering efficiency is unsatisfactory, the clients only use a backup filter screen to change the clogged one. The clients don’t need to turn off the whole system.

2. **Purpose**
   For the filtering work in industries.

3. **Features**
   (1) High processing amount with constant filtering.
   (2) Manual operating backwash system.
   (3) We use European stainless steel wedge wire screen which are perfectly filtering and not easily broken.

4. **Product Photo**

   ![Product Photo](image1)

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1. **Structure and Principle**
   CJS Single Filter is the basic form of several different types of filter equipment, using European stainless steel wedge wire screen, the exactness of the filter is as fine as 0.025mm (450Mesh), and can use either gripper or flange type for in-outlet. According to the different working pressures, the clients can choose different specifications. There are two pressure detectors which makes it possible to check the change of in-outlet pressure, then clients can clean the filters.

2. **Purpose**
   For the filtering work in industries.

3. **Features**
   (1) Fast installation and uninstallation.
   (2) We use European stainless steel wedge wire screen which are perfectly filtering and not easily broken.
   (3) Easy to maintain.

4. **Product Photo**

   ![Product Photo](image2)
SELF-CLEANING FILTER-FAB SERIES (BRUSH TYPE)

1. Structure and Principle
   It is controled by Timer and Pressure Difference Detector. As the pressure difference between inlet and outlet flows reaches the set value, a pressure difference detector will send a signal to the control system to start the motor. A brush driven by the motor will then brush away impurities on the screen by making rotational movements. A discharge tube will then be open, from which eddying water driven by the brush’s movement will carry all impurities washed off from the screen out of the filter.

2. Purpose
   For the in-line processing and security filtration equipment before house.

3. Features
   (1) Fully automatic control system.
   (2) The filter is provided with a motor-driven brush device for more effective filter cleaning operations.
   (3) We use European stainless steel wedge wire screen which are perfectly filtering and not easily broken.

4. Product Photo
PLC AUTOMATIC BACKWASHING FILTER

1. **Structure and Principle**
   Using the design of inside backwash. In the multi-tube system, there is a set of backup screen, and the backup screen shares filtering work. And the system uses filtered liquid to clean screen one by one, and the others still work to maintain constant filtering.

2. **Purpose**
   It’s used in the in-line processing in the industries which need to handle high processing amount and constantly filtering.

3. **Features**
   (1) High processing amount.
   (2) Fully automatic backwash function.
   (3) Constantly filtering.
   (4) We use European stainless steel wedge wire screen which are perfectly filtering and not easily broken.

4. **Product Photo**

![Product Photo](image-url)
SPS FILTER- PROTECTION BEFORE WATER TOWER

1. Structure and Principle
   FILAD SPS Filter-Protection before water tower, different from other plastic filtration equipment on the market, is all made of stainless steel. It is non-consumable with European SUS 316L stainless steel wedge wire screen. The clients can choose manual or automatic types. Impurity drain is a necessary measure to keep the filter system from precipitation. The suction produced by discharge tube opening generates instantly the power that draws off impurities stuck on the screen.

2. Purpose
   For the in-line processing and the protection before water tower.

3. Features
   (1) With an absolute filter rating of 80µm, it effectively keeps water towers, water storage tanks and household water pipes away from impurities, such as rust, sediments, suspended solids and so on, carried by running water. And it effectively protects them from blocks and erosion damages.

   (2) We use European stainless steel wedge wire screen which are perfectly filtering and not easily broken.

4. Product Photo

   ![Product Photo](image-url)
POSITIVE PRESSURE AIR

1. Structure and Principle
   (1) Suitable for turbidity feed water (up to 500 NTU) with outside-in flow and wide space (3.5mm) between membranes.
   (2) Low fouling hydrophilic PVDF membrane (0.03um) for easy cleaning and good chemical resistance.
   (3) Permeate flow rate is proportional increasing membrane pressure.
   (4) Round type membrane, durable disk structure, robust element can be backwash by clean water, design with light weight and compact construction, no leakage and no breakage.

2. Purpose
   (1) Pre-treatment for Reverse Osmosis - seawater, brackish water, surface water, effluent from secondary treatment of industrial and municipal wastewater.
   (2) Pre-treatment for ion, exchange - reduce resin plugging, lower regeneration cost, and length useful life resin life.

3. Features
   (1) The UPVC vessel is designed for ease of operation while optimizing the advantage of M-50 with positive pressure.
   (2) No Pre-filter required! Suitable for high turbidity feed water (up to 500 NTU).
   (3) Low power requirement due to short flow path & low transmembrane pressure, high flux, and low back wash flow.
   (4) Dead-End filtration operation, no friction on membrane surface.
   (5) Designed with internal air distribution tube for optimum air scrubbing effect.
   (6) Small foot print, lower running cost & better filtration quality than conventional filtration.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Membrane Polymer/MWCO</th>
<th>PVDF/100K</th>
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</thead>
<tbody>
<tr>
<td>Pore size(μm)</td>
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<tr>
<td>Configuration</td>
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<tr>
<td>Element Membrane Area(m²)</td>
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<td>Element flow rate(LPH)</td>
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<td>Max, TMP(bar)</td>
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<tr>
<td>Filtrate Turbidity(NTU)/DSI</td>
<td>( \leq 0.2/\leq 2) bar</td>
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<tr>
<td>Max, Feed Turbidity(NTU)</td>
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<tr>
<td>Operating Temperature(℃)</td>
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<td>Max, chlorine Tolerance(ppm)</td>
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<tr>
<td>Dimensions</td>
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<tr>
<td>Guide Plate OD(mm)</td>
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<tr>
<td>Membrane Module OD(mm)</td>
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<td>Connector OD(mm)</td>
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<tr>
<td>Weight(kg)</td>
<td>1.7</td>
</tr>
</tbody>
</table>
NEGATIVE PRESSURE AIR

1. Structure and Principle
   (1) The M-80 UF element is designed for use in submerged (suction) mode of operation, with the membrane installed horizontally for more effective cleaning by backwash and air scrubbing.
   (2) Suitable for high turbidity feed water (up to 20,000 NTU) with 3.5mm space between membranes.
   (3) Low fouling hydrophilic PVDF membrane (0.03μm) for easy cleaning and good chemical resistance.
   (4) Low power requirement due to low trans-membrane pressure, high flux and low backwash flow.
   (5) Permeate flow rate is increasing when suction pressure is increased.

2. Purpose
   (1) Suitable for high S.S. feed water.
   (2) For larger flow rate operation modules are connected in parallel.

3. Features
   (1) The UPVC vessel is designed for ease of operation while optimizing the advantage of the M-80 UF element.
   (2) Inside the vessel installed with air distribution tube for optimum air scrubbing effect.
   (3) Outside-in flow results in less fouling and easier cleaning.

4. Specifications and Functions

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<tr>
<td>Configuration</td>
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<tr>
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<td>Element flow rate(LPH)</td>
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<tr>
<td>Operation Pressure</td>
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5. Product Photo
AUTO SELF-CLEANING FILTERS

1. **Structure and Principle**
   When leaving the dirty filter pressure resistance up to a certain pressure rise within the backwash is initiated when the pipeline, the use of each of the outlet of the pressure for backwashing of the filter to backwash, so that each filter can stay with good filtering performance.

2. **Purpose**
   Wastewater treatment (to reduce SS), refrigeration and air conditioning, RO filter prior to treatment, recycled water filtration, spray equipment, anti-blocking filter, machining of the cutting fluid circulation and filtering, before the pre-filtered water tower.

3. **Features**
   
   (1) Automatic backwash filter blocking exclusion, reverse wash water without interrupting the continuous time filter.
   
   (2) Pull-back design, without removal of piping to check the internal decomposition.

   (3) Pressure design, suitable for high pressure use.

   (4) Filter for the 316SS material, suitable for a variety of fluids.

4. **Product Photo**
PRO PURIFICATION SYSTEMS

1. Structure and Principle
   (1) RO module: TFC spiral Wound.
   (2) Centrifugal high pressure pump.
   (3) PLC controller.

2. Purpose
   (1) Water Purification.
   (2) Waste recovery.
   (3) Dewatering.

3. Features
   (1) Software system design from supplier.
   (2) PLC controller.

4. Specifications and Functions
   (1) Semi-auto control.
   (2) Auto flushing design.
   (3) Pump protection.
   (4) Product quality meter.
   (5) CIP apparatus.
   (6) Shut down flushing.

5. Product Photo
PUFF ULTRAFILTRATION UNIT

1. Structure and Principle
   (1) Module: Spiral-Wound, Disc, Hollow Fiber, Tubular.
   (2) MWCO: 10,000 up.
   (3) Mochas: Dead-end Cross flow.
   (4) Material: Organics or inorganics.

2. Purpose
   (1) Concentration or recovery of valuable materials from products.
   (2) Purification or pretreatment of RO.

3. Features
   (1) Co-operation with membrane suppliers.
   (2) Co-operation with worldwide consultants.

4. Representative Attainments
   (1) Taiwan Sugar Bio-Tech Plant.
   (2) Industrial Technology Research Institute.
   (3) Institute Of Unclean Energy Research.

5. Product Photo

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SEPARATION PROCESS TECHNOLOGY INC

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EDI ULTRA PURE WATER SYSTEM

1. **Structure and Principle**
   This system combines ED & resin technology. It can easily remove ions from pure water to produce ultra pure water up to 17MΩ depending on feed without resins regeneration.

2. **Purpose**
   Refining treatment for ultra pure water.

3. **Features**
   (1) No chemical regeneration.
   (2) Steady product quality.

4. **Specifications and Functions**
   (1) Product water: 0.2m³/hr up.
   (2) Resistively: up to 180 MΩ-CM.
   (3) Discharge: 0.

5. **Product Photo**
PURE AND ULTRAPURE WATER PURIFICATION FACILITY FOR THE GENERAL AND ELECTRONICS INDUSTRY

1. **Structure and Principle**
   The facility is composed of automatic PLC controlled filters (including sand filter, activated carbon filter, soft water filter and 2B3T system), RO (Reverse Osmosis) module, EDI/CEDI electrodialysis module, automatic mixed bed filter, rear end ultrapure water supply system, PLC central control system, man-machine interface operating system and central monitoring system.

2. **Purpose**
   Soft, pure and ultrapure water purification.

3. **Features**
   Provide water purification total solution through membrane technology and engineering technique integration. Close relationship with the customer starting from the planning stage with best return on investment for the customer in mind. Yeameei provides total engineering solution from planning, design to construction and offer complete information and service to the customer regardless of contract types.

Yeameei utilizes advanced design software to integrate the overall engineering operations from research evaluation, design planning, simulation, test run to operation and maintenance with precision calculation to the individual nodality. Provide feasible hardware construction planning for the customer with precision construction control through solid engineering methods to achieve perfect quality.

4. **Product Photo**

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亞美先進科技股份有限公司
YEAMEEI ADVANCED TECHNOLOGY CO., LTD.
台中市工業區三十二路 63 號 No. 63, 32th Rd., Taichung Ind. Park Taichung, Taiwan
TEL: +886-4-2358-0925 FAX: +886-4-2358-0926 E-mail: yeam@ms12.hinet.net http://www.yeameei.com.tw
REGENERATION-FREE PURE-WATER EQUIPMENT

1. Structure and Principle
   This pure-water equipment is engineered with a simple structure, which requires no regeneration at the client end. Regeneration can be performed at our company; it offers low cost, small equipment space, manpower saving, no wastewater treatment for high purity 18 MΩ-CM water.

2. Purpose
   Applicable for small to medium high-tech plants, manufacturers requiring only small amount of high-purity water such as biotech, IC packaging, testing, photoelectric, electroplating, surface treatment, and pharmaceutical manufacturing.

3. Features
   (1) Free of manual operation.
   (2) Saving in initial setup cost.
   (3) Low space requirement, easy relocation.
   (4) No wastewater.
   (5) For small to medium water requirement.
   (6) High water purity.

4. Specification and Functions
   (1) Treatment capacity: 0.1~3.0 m³/hr.
   (2) Purity: 10~18 MΩ-CM.

SUNRAY SCIENCE & TECHNOLOGY CO., LTD.
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TEL: +886-2-8797-1123  FAX: +886-2-8797-1127
E-mail: sunraytw@ms35.hinet.net  http://www.sun-ray.com.tw
FIXED-BED ULTRAPURE WATER
PURIFICATION FACILITY

1. Structure and Principle
   The most advanced manufacturing process is adopted by using ion balanced resin to purify water to industrial grades of over 1 MΩ-CM, and mixed-vat model can achieve over 10 MΩ-CM purification.

2. Purpose
   Manufacturers requiring large volume of industrial-grade pure water such as power plant, petrochemical plant, steel mill, semiconductor plant, and biotech industry.

3. Features
   (1) Simple equipment structural design.
   (2) Minimum control valves.
   (3) Require no flushing.
   (4) Minimum solvent requirement close to theoretical level, large process capacity.
   (5) Minimum wastewater.
   (6) Simultaneous regeneration and neutralization that meets release pH standards to minimize the cost of wastewater treatment.
   (7) Short regeneration time (2~3 hours).

4. Specifications and Functions
   No standard specification, design and building are customized according to client requirement of water quality and volume.

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity</th>
<th>Draw Capacity /cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>2B3T-50</td>
<td>50m³/hr</td>
<td>1,000m³</td>
</tr>
<tr>
<td>2B3T-100</td>
<td>100m³/hr</td>
<td>2,000m³</td>
</tr>
<tr>
<td>2B3T-150</td>
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<td>3,000m³</td>
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<tr>
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</tr>
<tr>
<td>2B3T-500</td>
<td>500m³/hr</td>
<td>10,000m³</td>
</tr>
</tbody>
</table>

Remark: To accommodate water type, preliminary treatment equipment can be fitted, such as activated carbon filter as well as backend treatment equipment like mixed-vat and external flusher and solvent tank.

5. Product Photo

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  E-mail: sunraytw@ms35.hinet.net http://http://www.sun-ray.com.tw
AUTOMATIC BAR SCREEN

1. Structure and
   (1) The reciprocating cleaning grab takes the solid waste away from the screen to waste basket.
   (2) An automatic operation device makes the grab move smoothly to clean the waste out.

2. Purpose
   This machine is equipped in the open channel to clean the solid and floating waste up to waste disposal.

3. Features
   (1) Big volume of cleaning grab.
   (2) All made of stainless steel that forms solid structure and it is enough to against corrosion.
   (3) Automatic operation is set by PLC panel.
   (4) Easy operation.
   (5) No movable mechanism is under the surface of water that makes it easy to maintain.

4. Product Photo
AERATED GRIT AND GREASE REMOVAL MACHINE

1. Structure and Principle

   (1) The machine is equipped above open channel and used to remove grit, grease and scum from raw wastewater.

   (2) By aeration that grit sinks down, but grease and scum float up to surface of the wastewater in the channel.

   (3) The bridge travels back and forth on the channel. The submerged pump fixed beneath the bridge draws grit into a sink to separate from wastewater.

   (4) A skimmer moves follow the bridge over the surface of wastewater and scrapes the grease and scum into the drain pipe at end of the channel.

2. Purpose

   The machine is equipped for eliminating grit, grease and scum from raw wastewater.

3. Features

   (1) The forced aeration accelerates grit, grease and scum to be eliminated.

   (2) It is no need to clean grit that can be disposed directly.

   (3) All movable mechanism are set above the channel so that the machine is easy to maintain.

   (4) Automatic operation by means of programmed logic control

4. Product Photo
AUTO BAR SCREEN

1. **Structure and Principle**
   The Bar Screen fixed on the Machine frame and the Bar with Teeth fixed on the chain Which drove by the Motor with Gear Reducer, meanwhile, driven direction was the same with the waste water running one. The Solids (impurities) or residues will be captured by the rod with teeth from the bottom to the top and caught by the Container (Option). This equipment is running continuously when pressed the Switch On button and stop when pressed the Switch Off button.

2. **Purpose**
   Hospital, school/government agencies, livelihood sewage, municipal wastewater treatment plant, Industrial area comprehensive wastewater treatment plant, pump station and all kinds of Industrial wastewater … etc. for removing the forepart dross, suspended solids and heavier sediments of the above wastewater treatment and protect the post-treatment equipment (pump) to avoid clogging from the impurity.

3. **Features**
   (1) Machine Frame and teeth made of stainless steel(SUS304), with corrosion / acid / alkaline resistance.
   (2) Adopted the Torque Limiter to protect this Bar Screen, prevent deformation of parts or damage, and avoid repair or replacement parts.
   (3) High Efficiency:
      ① Teeth and Chain strong enough for removing the design residues.
      ② Teeth rack running speed will be 5.4 m/min (50HZ), 6.5 m/min (60HZ).

4. **Specification and Functions**
   (1) It is designed for removing the coarse suspended Solid Continuously.
   (2) It is designed for reducing the post waste water treating burden and equipment capacity.

5. **Product Photo**

元錫工業股份有限公司  YUAN CHANG TSAY INDUSTRY CO., LTD.
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SOLID-LIQUID SEPARATING MACHINE

1. **Structure and Principle**
   The sewage (waste) water feeds into filtration drum, the suspended particles which are greater than the diameter of the filter mesh will be attached to the wedge filter gaps of seam barrel. Through the filter drum slowly rotating ring spiral guide to clockwise, solids are brought to the outlet plate, but circulating water with solids smaller than the diameter of the filter mesh will go through the filter directly via the water pipe, back into the system for subsequent processing.

2. **Purpose**
   ◎ Removing and separating of the suspended solid, floating impurity, settling matter of the forepart treatment, to smooth processing flow, reducing the subsequent load and equipment protection.
   ◎ For the floating matter, solid mater removing and solid-liquid separating of various industrial waster water pre-treating stage.
   ◎ For the engineering drainage and large-size waste water treatment of municipal sewage, paper & pulp sewage, leather & tannery sewage, food industry sewage, butchery industry sewage, fiber industry sewage, chemical industry sewage…etc.
   ◎ For decreasing the post treating fees and protecting the post-treatment equipment (sludge pump) to avoid clogging by the impurity.

3. **Features**
   Intercepted solids stay on stainless steel triangular wedge filter, sewage flow from the large area to a small area to conduct trash filter that reduces blocking rate, increase the amount of water filtration.

4. **Specification and Functions**
   The captured residues will be removed through the wedge wire screen to get the higher filtering result and lower clogging ratio.

5. **Product Photo**

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TEL : +886-4-2630-5899 FAX : +886-4-2630-8299 E-mail : yciel@yciel.com http : // http://www.yciel.com
DRUM FILTERS

1. **Structure and Principle**
   Make use of the filtering mesh net adhere to the circumference of the rotary drum with enforce-supporting frame structure and lead the sewage into the drum (filtrate out), meanwhile, the residues will be removed to get the best filtering result.

2. **Purpose**
   (1) Adopted the above goods after the Sedimentary Tank or Sludge Scraper of the 2\textsuperscript{nd} class treatment and a good substitute for the fine filtering of the Sand Filter (Tank) to reach the discharging standard.
   (2) To treat the remove of the Suspended Solids and impurities of the discharge water after the various industrial waste water treatment for the recycling usage (a substitute for the washing water supplying of the Belt Press).
   (3) The particles remove of the fine Suspended Solid of the 3\textsuperscript{rd} class waste water treatment.
   (4) To remove the impurities (Non Suspension-thing on liquid level) of the processing water of the various industry for the recycling using.
   (6) For the Aquaculture Water Quality purification-Filter Treatment

3. **Features**
   Please select the different filter opening (8~150mesh) particle and the individual matching washing pressure to get the best filtering result for the various filtering field.

4. **Specification and Functions**
   (1) Its running, washing function controlled by liquid level sensor to save the washing water and electric power.
   (2) The water inlet and outlet is balance design, meanwhile, the filtering mesh net adhere to the circumference of the rotary drum with enforce-supporting frame structure and filtering under water will have the long life span of the filtering mesh net.

5. **Product Photo**
OIL-WATER SEPARATING MACHINE (THE OIL-WATER SEPARATING MACHINE FOR OIL FLOATING WASTEWATER)

1. **Structure and Principle**
   The sewage inlet and outlet is balanced design, meanwhile, make use of the Fiber Filter Belt to remove the floating oil on the surface of the sewage tank and scrape the best removing result.

2. **Purpose**
   1. For Recycling the separating of Floating Oil and Waste Water produced from all kinds of industries. (Not including emulsifying condition and dregs floating oil…etc)
   2. The above equipment especially suitable for the applications of Steel/ Iron Industry, Metal Industry, metal processing Industry and Metal Surface treatment Industry…etc.

3. **Features**
   1. The device uses high effective fiber filter belt, the use of fiber filter belt with capillary filtration adsorption, the effective adsorption surface film, meet with a special scraper designed for getting the two times floating oil or grease removing volume.
   2. With High efficient and quick waste Oil(Grease) removing, long belt life span when using our Oil-Water Separating Machine (Belt).
   3. Simple structure design, Easy Installation, Adjustment and Maintenance.
   4. For reducing the post-treatment burden after using the above equipments to remove the floating oil(grease) of the waste water pre-treatment.
   5. We will choose the suitable machine Models and Belts for the different waste oil (or grease).

4. **Specification and Functions**
   1. Our Fiber Filter Belt can absorb the floating oil about 1~5mm thickness.
   2. It is designed to remove the floating oil continuously and get the obvious result.

5. **Product Photo**

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INTELLIGENT DIFFERENTIAL PRESSURE PRECISION FILTER

1. **Structure and Principle**

   Traditional filter (the filter barrel) function only using backwash or manual cleaning filter core, can not effectively prevent the clogging of filter core. After a period of using time, the water production decline, filter clogging is bound to stop frequently to clean filter or replace the filter, the cost of long-term use is very high.

   Yuan Chang Tsay develops Intelligent Differential Pressure Precision Filter, minimum accuracy can reach filtering 10um (size of approximately macromolecules). Filters are made of around 3 to 5 layers of sintering, the thickness reach 1.5mm or more, be able to bear high pressure and no need to replace the filter. Using a pressure sensor, when the pressure is increased will automatically clean the filter and discharge blocking material at the same time. When self-cleaning filter, water production only slightly reduce (approximately 50L/Lot), without downtime, improve performance, and reduce the cost of labor and replace the filter.

2. **Purpose**

   (1) Pure water, reverse osmosis, ion exchange pretreatment.
   (2) The central air conditioning cooling water filter.
   (3) The swimming pool cycle water filtration.
   (4) Reclaimed water recycling.
   (5) The municipal green spray, agricultural spraying filter.
   (6) Ships' ballast water filtration.
   (7) The car wash cycle water filtration.
   (8) Groundwater, surface water, rust filtering.
   (9) The iron and steel, petrochemical, paper making, metallurgy and other industries cooling water filter.

3. **Features**

   (1) High precision and stable water filtration.
   (2) Pressure difference through the electronic control, timer control, automatic backwash, no personnel to operate.
   (3) Backwashing without stopping produce water, continuous operation, stable and reliable.
   (4) Simple device structure, fewer parts, the low cost of operation and maintenance, easy operation and management.
   (5) The wide usage area and applicable to different water source for filtration.

4. **Product Photo**

   ![Product Photo](image-url)
Multilayer Filtering Type
(Microalgae / Green Algae Harvesting Machine)

1. Structure and Principle
   Multi-layer filter structure of gravity, capillary suction absorbent layer, absorbent layer of material hydrophilic properties, primarily energy-driven water filtered through the filter layer.

2. Purpose
   It may conform to the micro / green algae harvested, concentrated activated sludge and other biological particle separation, higher viscosity of sludge thickening applicable, general industrial solid-liquid separation processes.

3. Features
   Low energy consumption, simple mechanical structure, synchronous filtration squeeze, reducing clogged filter layer, automated access to materials, automatic cleaning equipment, low aperture highly hydrophilic feature.

4. Specification and Functions
   No vacuum / high pressure high energy-consuming units, harvest low energy consumption, no vacuum / high pressure high destructive power unit, harvesting of algal cells can protect intact filter using generally available materials, low cost and synchronization filtering / backwashing function filter clogging problem solving.

5. Product Photo

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INTERCEPTION TANK

1. Structure and Principles

- InFlow
- Moveable Filtration Tank
- Flow Rate Adjustment Board
- Partition
- Flow Rate Adjustment Board
- Outflow

2. Purpose

It can be used to prevent hard-to-treat materials in wastewater from flowing into the pipe lines. There are two types for different purposes:

(1) For Oil: it is used to prevent water with excess oil released by households or commercial kitchens from congesting the water-exhaust system after it is cooled and solidified in the flowing path; therefore, it is called the Oil Intercepting Tank.

(2) For Petroleum: it is used to intercept wastes with gasoline, oil, and sand released by auto repair shops, processing plants, gas stations, and car parks. Therefore, it is called the Sand-setting Oil Remover Tank or Petrol Supply Tank.

3. Features

(1) Leftovers, floating oil, floating contaminants, and solidified animal fats can be creamed or solidified and extracted simultaneously.

(2) It only uses electricity of a 1/2hp motor and no frequently-replaceable parts.

(3) Animal fats are not dissolved by heating, therefore, no worries of methane explosion.

(4) It is highly effective for treatment of solidified pork fat or cooking oil.

(5) The oil scraper is made of stainless steel (not rubber); therefore, it does not harden—very durable.
CENTER FLOW TRAVELLING BAND SCREEN

1. Structure and Principle
The center flow traveling band screen is an unique design for screening the inlet cooling water in power and desalination industries. The machine utilizes the center flow principle and semi-circular basket design. The floating, fishes and marine life in inlet water shall be screened, retained in baskets and trapped in the intake structure. All indicators are that TBS is the best available screening unit for protecting those living organisms. Rather than causing this marine life to impinge on the screen, the TBS actually scoops them out of water by its basket-shaped screening element.

2. Purpose
The system is installed after the coarse bar screen for screening the solids or marine life which passed the coarse bar screen in order to protect the following pumping equipment and utilities.

Scope of Application:
1. Power plant inlet cooling water screening
2. Wastewater inlet pre-treatment
3. Desalination plant feed water screening

3. Features
1. Driving chain maintenance free.
2. High efficiency ---about triple of through flow design in same dimension.
3. Wide range mesh size (0.1 to 10 mm).
4. Less spray wash water.
4. Specifications and Function

① Driving unit ② Control panel  
③ Spray wash system ④ Debris trough  
⑤ Screen basket ⑥ Bypass valve (Option)

① Protection Cover  
② Spray water pipe  
③ Baskets  
④ Chain  
⑤ Debris trough  
⑥ Base frame  
⑦ Retaining plate

5. Product Photo

6. Award (Certified) Items

(1) The product is ISO-9001: 2000 certified for design, manufacturing and installation.  
(2) Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999.
DRUM SCREEN & MICRO SCREEN

1. Structure and Principle
Screening is a necessary process in a wastewater treatment plant. The purposes of removing floating and suspended materials are as follows:

1. Prevent the clogging or damage in downstream pipe lines and equipment.
2. Minimize downstream mechanical loading.
3. Prevent sludge accumulation in downstream.
4. Reduce oxygen demand in downstream.

The screens are separated into two categories:

A. Bar screen: widely used for intake water screening.
B. Mesh screen: widely used for fine particle or debris removal.

2. Purpose
For removal of floating and suspending solids.

1. Drum screen: This screen is installed behind the Bar Screen to remove suspended materials and prevent clogging, reduce the loading in the downstream.

2. Micro screen: This screen is designed for effluent polishing of secondary treatment for S.S removal.

3. Features

1. Easy installation, time and labor cost saving.
2. All driving units are above the water level for easy maintenance.
3. Low hydraulic resource loss.
5. The spray nozzles are furnished to maintain the screen meshes in good condition.
6. The spray nozzles can be back-washed and brushed for cleaning without dismantlement, minimum spray water is required under operating pressure of 3~4 bar.
7. The drum surface is composed by multi-semi-circular mesh baskets which increase more than 20% filtration area compared to flat meshes and easy replacement without dismantlement of other components.
8. Two rotation speeds controlled by water level sensor to keep the facility in best efficiency.
4. Specifications and Functions
Material: Except some parts of ABS, the rest of the unit is made of SUS304 grade stainless steel.

5. Product Photo

6. Award (Certified) Items
(1) The product is ISO-9001: 2000 certified for design, manufacturing and installation.
(2) Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 2001.
CABLE OPERATED BAR SCREEN

1. **Structure and Principle**
   The cleaning grab is semicircular in shape, travelled on lateral guide rails. By suspension on three cables (two for lifting / descending and one for opening / closing the grab), this unit can be brought into operation at any depth. In automatic operation the cleaning sequence is repeated continuously until all suspended solids are removed. Grab opening and closing is achieved by turning of the swiveling rollers, whereby the length of control cable is automatically altered.

   On the downward travel, the grab runs in open position on the guide rails to the chamber floor whereby the blade of the grab is approx. 500mm distant from the grid.

   When reaching the chamber floor or scum layer, the grab movement is reversed by the automatic control of the slack line sensor; the closed grab travels upward with the screenings. Above floor, the screens are discharged by a wiper into a receptacle or onto a belt conveyor. The rest position of the cleaning grab is above the discharge chute.

   The nominal operating velocity when chamber depths are greater than 6m is about 10m/min. The usable load is minimum 100kg per running meter of grab length.

   In order to achieve a satisfactory cleaning of the screen, the designed flow velocity through screen bars shall be less than 0.8m/sec at lowest water levels.

2. **Purpose**
   The cable operated bar screen is fully automatic, suitable for removing large floating matters in water.

3. **Features**
   - (1) Large hoist capability.
   - (2) Rigid structure.
   - (3) Capable of grabbing floating matters at any depth.
   - (4) Capable of continuously dredging of deposits at the bottom.
   - (5) The driving mechanism is equipped with two driving units.
4. Specifications and Functions

Specification and application

<table>
<thead>
<tr>
<th>Material</th>
<th>General Application</th>
<th>Seawater application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel structure</td>
<td>Carbon steel</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Cable drum</td>
<td>Cast iron</td>
<td>Cast iron</td>
</tr>
<tr>
<td>Cable drum shaft</td>
<td>Carbon steel</td>
<td>Carbon steel</td>
</tr>
<tr>
<td>Wire rope</td>
<td>Galvanized wire rope</td>
<td>Stainless steel wire rope</td>
</tr>
<tr>
<td>Protection cover</td>
<td>Galvanized wire rope</td>
<td>FRP or Stainless steel</td>
</tr>
<tr>
<td>Guide roller</td>
<td>PA6G</td>
<td>PA6G</td>
</tr>
<tr>
<td>Roller pin</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Submerged bolts</td>
<td>Galvanized</td>
<td>Stainless steel</td>
</tr>
</tbody>
</table>

Driving Motor (10m/min lifting speed)

<table>
<thead>
<tr>
<th>Channel Width (KW)</th>
<th>Lifting Motor (KW)</th>
<th>Grab Open/Close</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 1.0</td>
<td>0.55</td>
<td>0.75</td>
</tr>
<tr>
<td>≤ 1.6</td>
<td>0.75</td>
<td>0.75</td>
</tr>
<tr>
<td>≤ 2.0</td>
<td>1.10</td>
<td>0.75</td>
</tr>
<tr>
<td>≤ 3.0</td>
<td>2.20</td>
<td>0.75</td>
</tr>
<tr>
<td>≤ 4.0</td>
<td>3.00</td>
<td>0.75</td>
</tr>
<tr>
<td>≤ 5.0</td>
<td>4.00</td>
<td>0.75</td>
</tr>
</tbody>
</table>

5. Product Photo

6. Award (Certified) Items

(1) The product is ISO-9001: 2000 certified for design, manufacturing and installation.

(2) Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999.

(3) Industrial Development Bureau of MOEA certified the product for environmental protection quality standard in 2004.
GENERAL LIFTING DEVICE

1. Structure and Principle
   The lifting device set consists of the a plate, lifting device, motor with reducer, hand wheel, opening indicator, rack rod (optional), emergency descending level, cam switch and necessary driving mechanisms.

2. Purpose
   The device can be applied to drive the stop gate for opening adjustment.

3. Features
   (1) Easy Operation / Maintenance. Package design with indicating lamps and alarm, accessible operation and maintenance.
   (2) Easy manual operation. The designed manual operating force is lower than 10 kg. Non-return device is furnished for safety.
   (3) Self descending function.
      A. The stop gate can be descended by graving under auto or manual mode, the centrifugal braking device is provided for safety.
      B. Can be operated on site through the self descending level.
      C. Can be operated remotely by pressing the push button.
   (4) Can be matched with the level gauge or earthquake detector.
   (5) Protection
      Limit switches provided for over-torque protection during descending and lifting travel.
      Approximate switches provided for full open and full close control.
   (6) High efficiency
      High efficiency gear reducer.
   (7) Double speed design
      The operating speed is designed to run under slow speed during initial and ending stages and under fast speed during the mid-stage of travel.
   (8) Tailor made
      The system can be tailor made for special requirement.

4. Specifications and Function
   (1) Single Cables lifting device

![Specification Table]

<table>
<thead>
<tr>
<th>Model</th>
<th>SWGL03</th>
<th>SWGL05</th>
<th>SWGL07</th>
<th>SWGL09</th>
<th>SWGL12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver HP</td>
<td>1/4</td>
<td>3/4</td>
<td>3/4</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Lifting capacity Kg</td>
<td>3000</td>
<td>5000</td>
<td>7000</td>
<td>9000</td>
<td>12000</td>
</tr>
</tbody>
</table>

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E-mail : hplusr@ms15.hinet.net  http://www.hplusr.com.tw/first.htm
(2) Single rod lifting device

(3) Double rods lifting device

(4) Double Cables lifting device

5. Product Photo
AERATED GRIT AND GREASE REMOVAL EQUIPMENT

1. Structure and Principle
This aerated Grit and Grease Removal Equipment can be installed and traveled on the rectangular tank. By forced aeration, grease and scum float to the surface of the liquid then skimmed into the grease/scum pit by a surface skimmer for further treatment. Organic matters attached on the solids can be detached by aeration. Grits accumulated on the bottom of the tank can be pumped to the grit washer for washing and the liquid in the grit washer is returned to the tank for further treatment. The cleaned grit can then be collected in a cart for disposal.

2. Purpose
For grit and grease removal.

3. Features
(1) Pre-aeration, improve BOD & SS removal in followed facilities.
(2) Removal of inorganic solids.
(3) Collected grits can be disposed directly, no further treatment is required.
(4) All moving and operation parts are installed on the top of the tank.
(5) The operation sequence can be set manually.
(6) The driving roller is made of special rubbers, no sliding concerns.
4. Specifications and Function

**Construction**

- Suction Scraper Type
- Blade Scraper Type

4. Product Photo

5. Award (Certified) Items


2. Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999.

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E-mail : hplusr@ms15.hinet.net   http://www.hplusr.com.tw/first.htm
BUT THE AGGLUTINATE PHARMACEUTICAL OF HIGH POLYMER OF MODE STEEPS THE MAKING DEVICE

1. Structure and Principle
The use of Venturi principle, will agglutination absorption agent to containers full of mixed evenly with water to soak the purpose of medicine.

2. Purpose
The funnel exported in one bottom of product department, can put into the agglutinate pharmaceutical of the form of the powder in the funnel, what outside have open to appeal for, water enter in three-way pipe, utilize Venturi tube principle, flow to the big container at a high speed, can make by funnel in agglutinate pharmaceutical the even sucking to container not big and with water mixing not if dissolving, output not lasting pool as helping not congealing glue there aren't pharmaceutical ing fully even, settle the result in order to improve Shenyang.

3. Features
(1) The equipment is simple, need power, save the electricity, save the cost.
(2) Do not need to maintain, does not block and form cubically.
(3) Simple to use, easy to operate.
(4) Patent number: Article No. 162911.

4. Specifications and Functions
Inflow is adjustable, the agglutinate amount of medicine added of pharmaceutical of written complaint of powder is adjustable, steeping making liquid of agglutinate pharmaceutical is also adjustable in thickness).

5. Product Photo
ACTIVATED-CARBON FILTER, RESIN LON - EXCHANGE BED

1. Structure and Principle
   The principle of this system is to use the absorbing function of charcoal to pick up organic matters in wastewater, whereas the ion exchange function of resins is applied to recover micro heavy metals in wastewater for regeneration and recycle.

2. Purpose
   The facility is designed for removing SS and COD from third-grade wastewater treatment.

3. Features
   (1) Can be used for any third-grade wastewater treatment.
   (2) Fully automated requiring no person.
   (3) Easy filter replacement with no requirement for intensive labor.
   (4) Large capacity.
   (5) Require small space.

4. Specifications and Functions
   (1) Material: The housing is made of stainless steel.
   (2) Filter: charcoal, ion resin.
   (3) Capacity: 1~200 ton/hr.

5. product photo
ELECTROCHEMICAL TREATMENT EQUIPMENT

1. Structure and Principle
This equipment offers excellent heavy metal removal for industries of high dye pollution such as synthetic dye manufacturing, fabric dyeing and printing, and papermaking as well as refuse seepage and metal surface treatment. This equipment achieves cleaning effects via expedient electrochemical reaction, oxidation reversal and electro coagulation to quickly separate condensations of pigments and heavy metal pollutants from water.

2. Features
(1) Patent:
This electrochemical treatment equipment is a technical co-operation with ANDCO. Environmental Processes Inc., which has been employed at more than 800 factories worldwide for wastewater treatment. The coagulation technology is patented in the US and many other nations.

(2) Electrochemical reaction:
Iron or aluminum ions are produced via direct current consumption of electrodes, which then react with the heavy metals particles in water to induce sedimentation. The deposits need only be dehydrated before removal, and the liquid layer above can be discharged directly.

(3) Binder:
Conventional chemical sedimentation method cannot process binders. However, the system is able to break binder links via iron or aluminum ions for simultaneous treatment.

(4) Water recycle:
Water after treated by electrochemical has very low heavy metal or pigment contents, hence, it can be recycled to save a large quantity of resources.

3. Specifications and Functions

<table>
<thead>
<tr>
<th>Heavy Metal</th>
<th>Water Content (mg/L)</th>
<th>Post-Treatment Content (mg/L)</th>
<th>Removal Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexavalent Chromium</td>
<td>60.0</td>
<td>0.05</td>
<td>99.91%</td>
</tr>
<tr>
<td>Total Chromium</td>
<td>88.0</td>
<td>0.57</td>
<td>99.35%</td>
</tr>
<tr>
<td>Copper</td>
<td>69.0</td>
<td>0.05</td>
<td>99.92%</td>
</tr>
<tr>
<td>Cadmium</td>
<td>20.0</td>
<td>0.002</td>
<td>99.99%</td>
</tr>
<tr>
<td>Zinc</td>
<td>300.0</td>
<td>0.05</td>
<td>99.98%</td>
</tr>
<tr>
<td>Lead</td>
<td>4.0</td>
<td>0.2</td>
<td>95.00%</td>
</tr>
<tr>
<td>Nickel</td>
<td>49.0</td>
<td>2.1</td>
<td>95.71%</td>
</tr>
<tr>
<td>Arsenic</td>
<td>14.0</td>
<td>2.0</td>
<td>85.71%</td>
</tr>
</tbody>
</table>

4. Product Photo

大毅技術工程股份有限公司
DIAMOND TECHNICAL & TRADING CORP.
新北市新莊區五權一路 1 號 8 樓之 5 8F-5, No.1, Wu Chuan 1st Rd., Hsin-Chuang District, New Taipei City, Taiwan
TEL : +886-2-2299-0620 FAX : +886-2-2299-2261
E-mail : diamond6@ms22.hinet.net http : // www.diamondtech.com.tw
ION-EXCHANGE MEMBRANE ACID RECOVERY SYSTEM

1. Structure and Principle
   Upon entering the feed tank, acidic waste is pumped through the filter and then enters the regulating tank to stabilize the speed of flow into the dialyses. The surplus acid in the regulating tank flows back to the feed tank. Acid passing through the dialyses is recovered, and the remaining fluid flows out from the lower left. Water is then pumped from the tank to another regulator for flow stabilization. The surplus water and recovered acid are then carried by water to the diffuser. The ion-exchange film used in the dialysis comprises positive ions; strong acid can be diffused through the anion-film. Other than hydrogen ions, no positive ions can pass through the film.

2. Features
   (1) Enhance electroplating and acid-wash quality.
   (2) Investment and operating cost meet economic efficiency.
   (3) Save cost of neutralization to treat acid wastes.
   (4) Low operating cost.
   (5) Easy maintenance.

3. Product Photo
POWDER AUTOMATIC DISPENSING DISSOLVERS

1. Structure and Principle

The powder / solution is producing through three tank with agitating and suitable control for getting the required producing consistency. The Power-Driven Ball Valve will be opened, metering pump and water supply will be started by electric control for getting the required producing consistency when the solution level reached the low one.

This device will be stopped when the solution level reached the high one, but the agitator will be controlled by timer.

2. Purpose

(1) Specially suitable for Municipal waste water treating factory, Industrial waste water treating factory and requirement of the flocculant solution feeding industry.

(2) Extensively applied by Sewage dewatering, Waste water treatment and the flocculant solution feeding occasions of the various processing industry (Food, Chemical, Dyeing, Papermaking …etc.).

(3) Suitable for the Powder’s dissolving-feeding of the various dry powder, pellet, flocculant and condensing liquid.

3. Features

(1) You may choose the powder or liquid (option) feeding function design for meeting your different requirements.

(2) The stable producing consistency will avoid granule or particle condensation forming or piping/pump obstruction, and unnecessary maintenance/powder cost will be also saved.

(3) Our Agitators operating design had the intermittent starting and stop running in this operation, meanwhile, got stable and equalizing solution output.

(4) This device will be stopped and no powder light will be on when the powder feeding tank is in the low quantity storage (option).

4. Specification and Functions

(1) This is an auto continuous type polymer solution make-up device.

(2) You may choose the powder or liquid (option) feeding function design for meeting your different requirements.

(3) Machine body(Frame): Made of SUS 304 Stainless Steel.

5. Product Photo
COOLANT FILTERATION, DEODORIZATION & WASTE REDUCTION SYSTEM

1. Structure and Principle
This system employs pressurized filtering, settling, and full blending to prevent bacteria growth by first separating wastes from dirty liquid. Settling and remove the floating grease to reuse the clean liquid.

Benefits:
(1) Excellent filtering effectiveness for high precision machining.
(2) Minimize odor.
(3) Long service life of coolant, low coolant replacement requirement.
(4) Low treatment cost of spent coolant.

2. Purpose
(1) Remove impurities from coolant.
(2) Recycle and minimize and environment pollution.

Features
(1) Reduce requirement of coolant (cost saving).
(2) Prolong coolant service span.

3. Features
(1) Reduce requirement of coolant.
(2) Prolong coolant service span.

4. Specifications and Functions
Equipment can be customized according to site requirement.
ASP WASTEWATER TREATMENT SYSTEM

1. Structure and Principle

Three Major Principles of Electrochemical Electro-dialysis System:
(1) Changing the electric charge property of impurities.
(2) Rearranging the configuration.
(3) Electrically neutral separation.

Three Major Reactions of Wastewater Treatment by Electrochemical Electro-dialysis System:
(1) Polarization.
(2) Two-Way Flow Control Polymerization.
(3) Dissociation.

2. Purpose

Capable of completely removing the oil and the color in the wastewater and high.
Removal rate for S.S., COD and BOD of wastewater. It ensures all effluent after treating meets The Department of Environment (DOE) Standard.

3. Features

(1) High removal rate for impurities of wastewater.
(2) Capable of completely removing the color in the water.
(3) Close system does not produce bad smell or generates noises.

(4) Possessing disinfecting effect.
(5) Instantly finish the process.
(6) Equipment occupies small area.
(7) Capable of testing in advance to avoid wrong investment.
(8) This equipment is still applicable when moving the plant.

4. Specification and Functions

<table>
<thead>
<tr>
<th>Examination project</th>
<th>Examination value</th>
<th>Module</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original Wastewater</td>
<td>After Processing</td>
</tr>
<tr>
<td>Fat</td>
<td>2050.0</td>
<td>6.5 Mg/l</td>
</tr>
<tr>
<td>Chroma</td>
<td>1870.0</td>
<td>110.0 Color Unit</td>
</tr>
<tr>
<td>Nickel</td>
<td>30.8</td>
<td>0.1 Mg/l</td>
</tr>
</tbody>
</table>

5. Product Photo
DISTRIBUTE THE AIR PLATE

1. Structure and Principle
   (1) Spread and cover: Neoprene Rubber, acidproof soda.
   (2) Spread the base: ABS

2. Features
   (1) " the tap , it is easy to install to cooperate with domestic ready-made 4/8.
   (2) The structure is sturdy and durable.
   (3) It is angry and with high efficiency to dissolve , is able to bear corrosivity .
   (4) There is effect opposit , never block.

3. Specifications and Functions
   (1) Enter the angry mouth in " the age of a draught animal , 3/8 " of 1.4/8.
   (2) Diameter: 80m/m.
   (3) Highly: 40m/m.
   (4) Keeping in touch with amount: 0.08~0.10m3/min.

4. Product Photo
THE DISC TYPE LIVING BEINGS STRAIN THE MATERIAL

1. Structure and Principle
   Such as the application of the appearance of the disc filter in the filter tower, the effect of bulk water well.

2. Purpose
   (1) The living beings drip and strain the tower to strain the material.
   (2) It is exposed to the suspending type which oxidizes the law and contact and strain the material to expose to the sun the angry pool.
   (3) The contact that the waste gas washes the tower strains the material.

3. Features
   Disc filter effect of bulk water, and increase the treatment efficiency filter tower.

4. Specifications and Functions
   (1) The size of appearance: (highly go to foot-path * * times of the foot-path ) 17cm * 16cm * 5cm.
   (2) The quantity of unit's volume: 450/m³.
   (3) Exposed to the area effectively: 80cm²/cm³.
   (4) The board is thick: 0.5-1.5mm.
   (5) Space rate: 95%.
   (6) Material: P.P( or P.V.C).

5. Product Photo

Patent number: Article No. 36430
DRIP AND STRAIN THE TOWER AND DISTRIBUTE THE FLOOD PEAK SPECIAL-PURPOSLY

1. **Structure and Principle**
   It is SUS304 materials to exactly organize, never get rusty.

2. **Purpose**
   The apron is distributed evenly.

3. **Features**
   (1) No matter how much the impurity in the sewage is, never block.
   (2) The apron one is highly adjustable.
   (3) The area of the apron is adjustable in size.
   (4) Do not need to maintain, do not need to wash, sturdy and durable.
   (5) Patent number: Article No. 051718

4. **Specifications and Functions**
   (1) Surfacing amount: 30-50 L/min.
   (2) Whether surface requirements. Age of a draught animal in 1”ψ.
   (3) 3. A diameter of apron: 135mm.
   (4) Distribute the largest height of the flood peak: 182mm.

5. **Product Photo**

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大陸水工股份有限公司
CONTINENTAL WATER ENGINEERING CORP.
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TEL: +886-2-2553-6015 FAX: +886-2-2557-6553 E-mail: cgg@ms22.hinet.net http: // www.pollution.com.tw
ACTIVATED SLUDGE/CONTACT AERATION

1. Purpose
   (1) It is 1.5 times of an active mud system to deal with ability to the organic matter, occupation of land is relatively small.
   (2) The output of mud is 2/3 of an active mud system.
   (3) Deal with the procedure back segmenting has chemical disposal, reducible 1/3 of the amount of medicine added (compared with active mud system).
   (4) Bulk out, block, little mud amount, reduce one operator of class

2. Features
   (1) This system is cut separately it and exposed to the shortcoming which expose to the sun the angry law except active the mud law, and keep the advantage of the two, namely there is little producing amount of mud, the mud will not be bulked out, the living beings will not block and operate the elasticity greatly if the living beings strain the material, make the biological process system activation strengthen, efficiency increases but more steady, easy to more use.

   (2) This system has mixed the suspending and fixity living beings, have complicated and intact biological looks, can improve between microorganism and organic matter, oil, real color rate of getting rid of of colour effectively.

3. Product Photo
MEMBRANE BIOREACTOR

1. Structure and Principle
   C2L using PVDF material to produce high strength hollow fiber membrane module, the pore size is 0.05 µm, which can effectively intercept macromolecular solids aerobic tanks and improve MLSS to 12000mg/L or more, to enhance the quality of effluent and achieve the re-use of water resources has great advantages.

2. Purpose
   (1) Municipal Sewage Reuse
   (2) Industry Wastewater Treatment
   (3) Drinking water plant & pre-treatment process for RO, etc.

3. Features
   (1) High and stable floxes
   (2) Uniform pore size;
   (3) High hydrophilicity and permanently dry membrane;
   (4) Oxidation-resistant PVDF membrane material;
   (5) High-strength composite structure with braid inside.

4. Specifications and Functions
   (1) Municipal Sewage Reuse: Sewage from city, hospital or school.
   (2) Tobacco plant/slaughter house / chemical industry wastewater/ Food plant/ paper mill wastewater, ETC.
   (3) Drinking water / purification plant filtration.

5. Product Photo
U.A.S.B. (UP FLOW ANAEROBIC SLUDGE BLANKET)

1. Structure and Principle
   Anaerobic granular sludge is employed to decompose organic substances in wastewater into CH₄ and CO₂, no oxygen or power supply required. It utilizes stirring to produce methane, which mixes wastewater with organisms for effective biodegradation.

2. Features
   (1) Simple structure, easy operation.
   (2) Require no power consumption.
   (3) Complete biodegradation.
   (4) Biogas produced may be reused.
   (5) Minimize sludge production, only 1/10 of aerobic treatment.

3. Award (Certified) Items
   Sunray Science & Technology is ISO-9000 and ISO-14001 certified since 2000.
VERTICAL CELLUAR-TYPE BIO-FILTER

1. Structure and Principle
   The open-contact cellular structure yields excellent strength. The sink/protruding surface expands the surface in contact with fluids, as well as stirring water flow into turbulence for higher efficiency of oxidation, making it an excellent system for organic wastewater treatment.

2. Purpose
   Eliminate BOD in water.

3. Features
   (1) Broader surface for excellent treatment capability.
   (2) Low cost, high performance, economic efficiency.
   (3) Low water resistance, more crevices, no clogging.
   (4) Excellent mechanical strength and durability, no distortion, no bending.
   (5) High plankton capture rate.
   (6) Apposite membrane attachment.
   (7) Excellent strength and operating safety.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>Crevice (mm)</th>
<th>Surface (m²/m³)</th>
<th>Porous Rate (%)</th>
<th>Single Sheet Gauge (mm)</th>
<th>Standard Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L</td>
</tr>
<tr>
<td>CM-80</td>
<td>80</td>
<td>53</td>
<td>99.2</td>
<td>0.55</td>
<td>1,000</td>
</tr>
<tr>
<td>CM-56</td>
<td>56</td>
<td>72</td>
<td>99.2</td>
<td>0.5</td>
<td>1,000</td>
</tr>
<tr>
<td>CM-40</td>
<td>40</td>
<td>105</td>
<td>90.0</td>
<td>0.4~0.45</td>
<td>1,000</td>
</tr>
<tr>
<td>HCM-80</td>
<td>80</td>
<td>45</td>
<td>99.3</td>
<td>0.55</td>
<td>1,000</td>
</tr>
</tbody>
</table>

5. Product Photo

相同企業有限公司  SIMILAR ENTERPRISE CO., LTD
台中市烏日區溪南路一段 506 巷 485 號
No. 485, Lane. 506, Sec. 1, His Nan Rd., Tong Yang Village, Wu Jih District, Taichung City, Taiwan
TEL: +886-4-2335-2827 FAX: +886-4-2335-2659 E-mail: same66@ms16.hinet.net http://www.similar.com.tw
ROTATING BIOLOGICAL CONTACTOR

1. Structure and Principle
   The rotating biological contactor is a biological contactor modeled by a horizontal array of circular mesh. Half of the unit is immersed in wastewater and the other half is exposed in the air. The biological contactor alternatingly rotates in the air and submerged into water. Organisms cultivated in the wastewater attach to the unit and form a film. When organism film comes in contact with wastewater, it decomposes or digest the oxygen-dependent contaminations, and when the film is exposed in the air, it refills oxygen favored by aerobic organisms. The cycle continues to progressively to reduce oxygen-dependent contaminations in the wastewater achieve the purpose of water purification.

2. Purpose
   Most effective and economical for treating living wastewater containing high level of BOD, chlorides and carbides as well as industrial wastewater.

3. Features
   (1) High flexibility: General wastewater varies greatly in both quality and volume, thus requiring highly flexible equipment to accommodate the needs.
   (2) Small space requirement: Of all treatment methods, biological contactor takes up the least space.
   (3) Power saving: As the helical twirls at a rather low speed (2rpm), it requires little power, only 1/5 of power required for active sludge.
   (4) Easy maintenance: Bio-contactor approach requires nearly no maintenance, only regular lubrication for the axle.
   (5) Easy operation: Regular technician will be able to operate competently after training.
Flexible capacity: Its resistance against organic load and toxic overflow is better than conventional method, and as the time for wastewater to stay is shorter, it’s more expedient in recovering accidental toxic leak.

Low sludge volume and odor, high concentration

High efficiency: Elimination of BOD5 can reach 90-98%.

Quick recovery: At the inception or following suspension, it requires only 3-5 days for recovery.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>SAME-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Area</td>
<td>2,350m²/m³</td>
</tr>
<tr>
<td>Disk Form</td>
<td>Mesh</td>
</tr>
<tr>
<td>Disk Diameter</td>
<td>3,000mm (size can be customized)</td>
</tr>
<tr>
<td>Membrane Material</td>
<td>HDPE</td>
</tr>
<tr>
<td>Axle</td>
<td>Seamless steel pipe</td>
</tr>
<tr>
<td>Speed</td>
<td>Main axle operates at 2 turns per minute; peripheral speed is 18.85m per minute</td>
</tr>
<tr>
<td>Motor</td>
<td>2hp</td>
</tr>
<tr>
<td>Decelerator</td>
<td>CYCLO 2-phase, or HELICAL model</td>
</tr>
<tr>
<td>Bearing</td>
<td>Auto bearing adjustment</td>
</tr>
<tr>
<td>Anti-Corrosion Treatment</td>
<td>Steel parts are covered with epoxy (except for SUS304 grade)</td>
</tr>
</tbody>
</table>
WAVY GRADIENT BIO-FILTER

1. Structure and Principle
   The contact filter is made of PVC in cellular form with crisscross waves, and the surface is specially frosted to promote organism growth.

2. Purpose
   General sewage treatment.

3. Features
   Large contact surface translates to large treatment capacity for effective capturing of organisms in water and forming of bio-contactor to purify water.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Spec</th>
<th>Size (mm)</th>
<th>Crevice (mm)</th>
<th>Porous Rate (%)</th>
<th>Material</th>
<th>Sheet Gauge (mm)</th>
<th>Contact Surface (m²/m³)</th>
<th>Seating Strength (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCM-60</td>
<td>1,200×600×600</td>
<td>58</td>
<td>98.7</td>
<td>PVC</td>
<td>0.4 ~0.45</td>
<td>135</td>
<td>1,500</td>
</tr>
</tbody>
</table>

5. Product Photo
MESH BIO-FILTERS

1. Structure and Principle
   HDPE high-density environmental friendly material.

2. Purpose
   High ammonia, nitrogen elimination rate.

3. Features
   (1) Capable of forming membranes in a very short time.
   (2) Large mechanical strength, each m² base withstands more than 8 tons.
   (3) High organism elimination rate, reduce space requirement, overall low investment cost.
   (4) Mesh formation offers excellent penetration.
   (5) Diverse formats (e.g.: mobile float, percolate, immersed types), any required length.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>Effective Surface (m²/m³)</th>
<th>Penetration Rate (%)</th>
<th>Porous Rate (%)</th>
<th>Pipe Diameter (m/m)</th>
<th>Unit Capacity (kg/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same-66</td>
<td>155</td>
<td>63</td>
<td>88</td>
<td>66</td>
<td>1~ 3</td>
</tr>
</tbody>
</table>

5. Product Photo

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SIMILAR ENTERPRISE CO., LTD

台中市烏日區溪南路一段 506 巷 485 號
No. 485, Lane. 506, Sec. 1, His Nan Rd., Tong Yang Village, Wu Jih District, Taichung City, Taiwan
TEL: +886-4-2335-2827 FAX: +886-4-2335-2659 E-mail: same66@ms16.hinet.net http://www.similar.com.tw

— 57 —
INNO-ULTRA HIGH EFFICIENCY GREEN ENERGY HYDROLYSIS SYSTEMS

1. Structure and Principle

Normally, the sludge generated by wastewater treatment plants contains materials having cell walls that are difficult to decompose, which blocks biological decomposition. However, the Inno-Ultra hydrolysis system can resolve this problem because of its application of high-energy physical waves. This quickly produces huge positive pressure and negative pressure oscillations in the wastewater, producing high temperatures and high pressures resulting in cell wall destruction.

2. Purpose

(1) Reduce sludge
(2) Increase biomass production.

3. Features

(1) Improve water quality and nitrogen removal rate.
(2) Reduce costs in wastewater treatment plant of construction and operation.
(3) Reduction in digested sludge mass, up to 30%.
(4) Decrease in digested time, up to 60%.
(5) Increase biogas produced by sludge, up more than 50%.
(6) Improve ammonia and nitrogen reduction’s processing performance, up more than 20%.
(7) No chemicals. Extremely efficient sludge hydrolysis.
(8) Improve dewatering, up to 15%.
(9) Commercialization sucess cases in advanced countries.
(10) Small size.
(11) Easy to install. (Plug & Play).
(12) Module structure design.
(13) High intensity horns.
(14) Stainless steel structure.
(15) Low maintenance costs.
4. **Specifications and Functions**

(1) Reactor container with oscillating unit: The reactor container includes oscillating units each equipped with an aerating pipe. The oscillating units move the ultrasound energy onto the streaming medium (sewage sludge, biomass).

(2) Rack with five generators KS1000/2000: The energy for the oscillating units is produced in these five generator modules. The supply voltage of 230 V /50-60 Hz is transformed into an electrical sinusoidal oscillation of 20 kHz and applied via the HF-line to the oscillating units. Each generator produces a continuous output of up to 1000 Watts.

5. **Product Photo**

![Product Photo](image-url)
BIO-MEMBRANE CONTACTOR

1. Structure and Principle
   By submerged the bio-film contactor under the wastewater with aeration, the micro-organisms will adhere and grow on the surface of contactor then decompose organic substances in the wastewater. Durable material, easy adhesion of micro-organism, high strength and back wash system are the key features of the treatment efficiency of this system.

2. Purpose
   Wastewater treatment.
   (1) Domestic wastewater treatment.
   (2) Low concentration wastewater treatment.
   (3) Tertiary treatment.
   (4) Small scale wastewater treatment.

3. Features
   (1) No return sludge required; easy operation and maintenance.
   (2) High micro-organism retaining capability; high treatment capability.
   (3) Can decompose low bio-degradable substances efficiently.
   (4) High adaptability of fluctuation in temperature.
   (5) High adaptability of fluctuation in influent rate and content.
   (6) Aerobic and anaerobic decomposition processed simultaneously.
   (7) Low sludge generation.
   (8) High transparency of treated water.
   (9) No sludge bulking trouble.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimension (mm)</th>
<th>Opening (mm)</th>
<th>Specific Surface (m²/m³)</th>
<th>Strength (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-60</td>
<td>1,160 x 580 x 550</td>
<td>58</td>
<td>135</td>
<td>900</td>
</tr>
</tbody>
</table>

5. Award (Certified) Items
   Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999.
JET AERATION AND MIXING SYSTEM

1. Structure and Principle

   (1) Jet aeration system: Consisted of jet aerator, recirculation pump and blower, the recirculation pump transferred the liquid through the liquid pipe, inner nozzle to the mixing chamber, homogenized with the air then discharge the jet plume horizontally. For maintaining the high efficiency, the liquid and air inlets were separated and one air manifold is matched with one liquid manifold.

   (2) Jet aspiration system: Consisted of jet aspirator and recirculation pump, the function is same as the jet aerator but the air is not forced supplied. The vacuum will be caused by different nozzles and high velocity of circulation liquid, sucking air through air pipe from atmosphere.

   (3) Jet mixing system: Consisted of jet mixer and recirculation pump, by double nozzle educator technology, the liquid in the basin will be sucked into the mixer and discharged after well mixing in the mixing chamber.

2. Purpose

   (1) For equalization tank and aerobic treatment facilities such as activated sludge process, oxidation ditch, oxidation pond or SBR; moreover through control of air volume, nitrification and de-nitrification can be carried out.

   (2) For equalization tank, flash mixing tank, coagulation tank, neutralization tank, chemical oxidation tank, disinfection tank, sludge storage tank, de-nitrification tank, chemical reactor, air stripping system and heat exchanger system.

3. Features

   (1) High oxygen transfer rate.

   (2) Complete mixing function: can be used in standard or extended SRT, high MLSS and activated sludge process.

   (3) Oxygen supply and mixing function can be controlled separately.

   (4) Low power consumption.

   (5) The inner and outer nozzle were all constructed in one piece by molding to ensure the smooth plume.
(6) Can be used in deep basin and high MLSS for space saving.
(7) All fittings were corrosion resistant.
(8) Low maintenance cost because of no rotation part submerged in water except submersible pump.
(9) Low installation cost.
(10) Can be self-cleaned by flushout system.
(11) Conserve the thermal energy by submerged installation.
(12) Can be wet installation.

4. Product Photo

5. Award (Certified) Items
(1) The product is ISO-9001: 2000 certified for design, manufacturing and installation.
(2) Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999.

6. Specifications and Functions
Material: SUS304 stainless steel or FRP
Main Nozzle Spec

<table>
<thead>
<tr>
<th>Model</th>
<th>HR1 (inch)</th>
<th>HR2 (inch)</th>
<th>HR4 (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal nozzle</td>
<td>&gt; 1</td>
<td>&gt; 1.5</td>
<td>&gt; 2</td>
</tr>
<tr>
<td>Liquid flow rate (GPM)</td>
<td>90 ~ 100</td>
<td>183</td>
<td>366</td>
</tr>
<tr>
<td>Air flow rate (SCFM)</td>
<td>10 ~ 30</td>
<td>20 ~ 60</td>
<td>40 ~ 120</td>
</tr>
</tbody>
</table>

Remark: External nozzle diameter varies according to specific system.

健鑫環境工程股份有限公司
H PLUS R ENVIRONMENTAL ENGINEERING CO., LTD
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TEL: +886-2-2276-9961  FAX: +886-2-2276-9962
E-mail: hplusr@ms15.hinet.net  http://www.hplusr.com.tw/first.htm
1. Structure and Principle

Membrane material quality performance parameter:

Polypropylene (PP) hollow fiber pore membrane material, has fine mechanical and the stable chemical properties, uses in one of MBR reactor most appropriate membrane materials. Its main performance:

(1) Membrane material quality: Polypropylene
(2) Membrane inside diameter: 320~350μm
(3) Membrane wall thickness: 40~50μm
(4) Membrane aperture: 0.1~0.2μm
(5) Air penetrability: >7.0×10-2(cm3/cm2·s·cmHg)
(6) Longitudinal strength: 120Mpa
(7) Factor of porosity: 40~50%
(8) Water leakage turbidity: <0.2MTU
(9) Design quantity: 1.0~1.2t/Day
(10) Membrane silk area: 8m2/piece
(11) Operation negative pressure: -0.01~-0.03

2. Features

(1) MBR and the traditional processing “the technology” compares:

<table>
<thead>
<tr>
<th>Superiority</th>
<th>MBR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduces the cost</td>
<td>The operating cost is low, maintains easily, and anti-flushing.</td>
</tr>
<tr>
<td></td>
<td>Ruse the water two times directly, conserve original water treatment fee and the waste water treatment fee.</td>
</tr>
<tr>
<td></td>
<td>The energy consumption is low, do not need the other chemical agent.</td>
</tr>
<tr>
<td>Space-saving</td>
<td>The processing system do not need sedimentation unit, but saves the space largely.</td>
</tr>
<tr>
<td></td>
<td>The sludge concentration is high, increases processing system unit activeness, may reduce the tank volume.</td>
</tr>
<tr>
<td>The efficiency is high</td>
<td>Remove the bacterium and the virus, achieves function of the disinfection.</td>
</tr>
<tr>
<td></td>
<td>Intercept large molecular polymer and increase the processing efficiency.</td>
</tr>
<tr>
<td></td>
<td>The sludge and the long chain polymer resident retention time is long. Growth rate slowly microorganism can detained and enhances the complex compound degeneration.</td>
</tr>
<tr>
<td>Reduced pollution</td>
<td>Biomass may temporarily stop completely, do not have the problem of traditional activated sludge separation procedure.</td>
</tr>
<tr>
<td></td>
<td>The anti-load, impulse and discharge water quality is stable.</td>
</tr>
<tr>
<td></td>
<td>The processing unit disposes closely, reduces the stink to overflow disperses.</td>
</tr>
<tr>
<td></td>
<td>Keep the low F/M ratio, reduces quantity of the waste sludge.</td>
</tr>
</tbody>
</table>

---

**Water/Wastewater Treatment and Recycling Equipment**  
**Biological Treatment Equipment**

**RYOSEI ENVIRONMENTAL INDUSTRIAL CO., LTD.**

新北市土城區中央路二段 191 號 8 樓之 3  
8-3F., No.191, Sec. 2, Zhongyang Rd., Tucheng Dist., New Taipei City, Taiwan  
TEL: +886-2-2381-1668  FAX: +886-2-2371-2769  
E-mail: ryosei7603@yahoo.com.tw  http://www.twimc.com.tw
(2) Compare the MBR and the traditional active sludge procedure

RAW WATER → Regulating tank → Activated Sludge tank → Sedimentation tank → Sand filter tank → Activated carbon filter tank → Disinfection tank → Discharge

Raw water → Regulating tank → MBR Tank → Replace → Discharge or Reuse

3. Product Photo

---

RYOSEI ENVIRONMENTAL INDUSTRIAL CO., LTD.

新北市土城區中央路二段 191 號 8 樓之 3
8-3F., No.191, Sec. 2, Zhongyang Rd., Tucheng Dist., New Taipei City, Taiwan
TEL : +886-2-2381-1668  FAX : +886-2-2371-2769
E-mail : ryosei7603@yahoo.com.tw  http://www.twimc.com.tw
ROUND DISK-PLATE UF-MBR MODULE

1. **Structure and Principle**

   (1) The format flat round disk of membrane, welded for each pair, mounted on a horizontal permeation shaft with patented mutual lock.

   (2) Permeate flow is from the outside of the double - sheet discs and into the central shaft, which is hollow to provide permeate off-take flow.

   (3) Low fouling hydrophilic PVDF membrane (0.03μm) provided good mechanical strength and high chemical tolerance results in long membrane life.

2. **Purpose**

   Wide space (7.0mm) between membranes, typically operation MLSS are 8,000~15,000 mg/L. Biosolids up to 30,000mg/L can be treated without fouling.

3. **Features**

   (1) High flux (30~35 LPM) allows competitive design with smaller foot print, low aeration (SAD < 15:1) and low capital cost.

   (2) Flux rates at peak flow can increase to 50LMH.

   (3) Low chemical consumption, simple cleaning procedure. Low flow path reduces filtrate pressure drop and allows low vacuum operation.

   (4) Inside the UPVC vessel, a stream of water generated upward as scouring air is diffused below membrane disk. This mechanism provides extremely stable filtration as the membrane does not allow sludge to adhere to membrane surface.

   (5) Once or twice daily backwash with 50ppm NaOCl prevent from biomass on to membrane surface.

   (6) Gravity system can be provided with tank depths > 3M liquid depth.
4. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Module No</th>
<th>NHV1-185-MBR</th>
<th>NHV2-185-MBR</th>
<th>NHV3-185-MBR</th>
<th>NHV4-185-MBR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Peak, Flux (LPH)</strong></td>
<td>250</td>
<td>500</td>
<td>750</td>
<td>110</td>
</tr>
<tr>
<td>@ minus 15cm-Hg, 25℃</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Element No.</strong></td>
<td>M125×1</td>
<td>M125×2</td>
<td>M125×3</td>
<td>M58×1</td>
</tr>
<tr>
<td><strong>Membrane Area, M2(ft2)</strong></td>
<td>5.6(60)</td>
<td>11.2(120)</td>
<td>16.8(180)</td>
<td>2.5(27)</td>
</tr>
<tr>
<td><strong>Membrane Material</strong></td>
<td>PVDF (Polyvinylidene Fluoride)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Membrane Nominal Pore Size</strong></td>
<td>0.3 μm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vessel Material</strong></td>
<td>UPVC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net Operation Flux, LPH (CMd)2</strong></td>
<td>150<del>250(3.5</del>6)</td>
<td>300<del>500(7</del>12)</td>
<td>450<del>750(10</del>18)</td>
<td>65<del>110(1.6</del>2.8)</td>
</tr>
<tr>
<td><strong>Scrubbing Air Flow (LPM)3</strong></td>
<td>50~80</td>
<td>100~160</td>
<td>150~240</td>
<td>30~50</td>
</tr>
<tr>
<td><strong>Per Backwash Volume (L)</strong></td>
<td>15’ 18</td>
<td>30~35</td>
<td>45~50</td>
<td>7~8</td>
</tr>
<tr>
<td><strong>Operation Mode</strong></td>
<td>Suction 15’30min, Backwash once</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operation TMP cm/Hg (Bar)</strong></td>
<td>-10<del>25 (-0.15</del>0.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Max, Backwash Pressure</strong></td>
<td>0.5 Bar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PH</strong></td>
<td>2~11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Daily Chemical Backwash</strong></td>
<td>50<del>100 ppm NaCl by Backwash 1</del>2 time/day</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cleaning</strong></td>
<td>1.01~2%citric acid (for inorganic fouling)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Module Dimensions (mm)</strong></td>
<td>Φ216×L950</td>
<td>Φ216×L1900</td>
<td>Φ216×L2850</td>
<td>Φ216×L508</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>8</td>
<td>16</td>
<td>24</td>
<td>6</td>
</tr>
</tbody>
</table>

5. **Product Photo**

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NEW CENTURY MEMBRANE CO., LTD

No.340, Futian 2nd St., South District, Teaching City, Taiwan
TEL: +886-4-2315-5828  FAX: +886-4-2315-5228  E-mail: ivan@ncm.com.tw  http://www.ncm.com.tw
INTRODUCTION OF FLAT PLATE MEMBRANE BIO-REACTOR (MBR) MODULUS

1. Structure and Principles

   (1) Good permeate water quality
       A. Low COD, BOD concentration.
       B. Low total nitrogen and total phosphorus concentrations.
       C. No suspended solids, used as pre-treatment of RO process.
       D. Bacteria can be removed completely.
   (2) MLSS up to 15000mg/L, system size is small.
   (3) Reduce the emission of sludge greatly.
   (4) 1.75 kg/m² is very light.
   (5) The strength and rigidity of the membrane is higher and can be backwash by the patented reinforcing technologies.
   (6) The system can be backwash online without stopping.

2. Features

   (1) High solids content, high turbidity, high COD/BOD industrial and municipal wastewater which is difficult to treat by conventional methods.
   (2) Water reuse and zero emissions.
   (3) Higher value sludge concentration and recovery system.
   (4) The wafer dicing oil recovery and value-added enhanced.

3. Specifications and Functions

<table>
<thead>
<tr>
<th>Items</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membrane type</td>
<td>PVDF</td>
</tr>
<tr>
<td>Pore size</td>
<td>0.04μm</td>
</tr>
<tr>
<td>Shape</td>
<td>Flat plate</td>
</tr>
<tr>
<td>Typical flux</td>
<td>0.35-0.8m3/m2/day</td>
</tr>
<tr>
<td>Max. operating Temperature</td>
<td>122°F (50°C)</td>
</tr>
<tr>
<td>pH, Continuous operation</td>
<td>2～10</td>
</tr>
<tr>
<td>pH, Clean in Process</td>
<td>2～11@122°F (50°C)</td>
</tr>
<tr>
<td>Frame</td>
<td>304 stainless steel</td>
</tr>
<tr>
<td>Permeate water manifold &amp; Aeration diffuser</td>
<td>PVC</td>
</tr>
</tbody>
</table>
PTFE MEMBRANE BIOREACTOR

1. Structure and Principle
   The hydrophilic Teflon (PTFE) film which is produced by EFM has the structure of nodes interconnected by fibrils which can effectively block the impurities and biological bacteria in the water. Therefore it can reach the emission standard of drainage water. The MBR module is consisted of frame placing area (upper side) and air-liquid mixed area (lower side.) Air is spurted to the air-liquid mixed area after sent to the air diffuser by the blower. The bubble will accelerate after mixed uniformly and can clean up the sludge on the membrane surface in order to stabilize the volume of drainage water.

2. Purpose
   MBR treating technology can simplify the procedure in the conventional treatment by taking place of the activated sludge tank, final sedimentation tank, sludge digestion and disinfection, hence increase the efficiency of land using..

3. Features
   Advantages of Hydrophilic PTFE for industrial wastewater:
   (1) Resist all kinds of corrosive chemicals \( \rightarrow \) pH range: 1-14
   (2) Anti-biotic
   (3) Higher Porosity \( \rightarrow \) Higher Flux
   (4) Low Surface Energy and Low Coefficient of Friction
       \( \rightarrow \) Non-adhesive, Easy to Clean
   (5) Good Mechanical Properties
       \( \rightarrow \) Long service life
   (6) Excellent Weatherability

The structure and characteristic of MBR
   (1) The MBR system has the on-line automatic backwash function to keep it from scaling.
   (2) Comparing with the conventional method, the MLSS of MBR system is much higher.
   (3) It can speed up the decomposition of microorganism and can withstand different water pollutions.
   (4) The bio-bacteria phase is rich and the sludge retention time (SRT) is long due to the membrane’s capability of keeping the microorganism in the sludge tank so that it is able to decompose pollutant and reduce the amount of waste sludge.
   (5) The module is easy to install. Each frame can be replaced individually. It is easy to maintain and operate.
   (6) Expansion of the system is flexible.
4. Specifications and Functions

Membrane frame specification table

<table>
<thead>
<tr>
<th>Item</th>
<th>EFM-80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membrane Area (m²/Piece)</td>
<td>0.8</td>
</tr>
<tr>
<td>Dimensions: W×H×T (mm)</td>
<td>490×1,000×6</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>2.45</td>
</tr>
<tr>
<td>Membrane Average Pore Size (μm)</td>
<td>0.1  1.0</td>
</tr>
<tr>
<td>Membrane Material</td>
<td>Hydrophilic ePTFE</td>
</tr>
<tr>
<td>Scrubbing Air Flow (L/min.Piece)</td>
<td>≥ 10 ≥ 10</td>
</tr>
<tr>
<td>pH</td>
<td>1  14</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>&lt; 0.5 &lt; 1.0</td>
</tr>
<tr>
<td>Suspension [SS] (mg/L)</td>
<td>ND ≥ 1</td>
</tr>
</tbody>
</table>

※ For different water quality, the volume of drainage water will be different. Complete test is needed. The data was collected initially from single membrane frame under 25°C, -30 kPa.

MBR System specification table

<table>
<thead>
<tr>
<th>Item</th>
<th>EFM-80-150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membrane Average Pore Size (μm)</td>
<td>0.1  1.0</td>
</tr>
<tr>
<td>Quantity (Piece)</td>
<td>150</td>
</tr>
<tr>
<td>Membrane Area (m²)</td>
<td>120</td>
</tr>
<tr>
<td>Dimensions: W×H×D (mm)</td>
<td>2,650×620×2,200</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>780</td>
</tr>
<tr>
<td>Support Plate</td>
<td>ABS</td>
</tr>
<tr>
<td>Frame Material</td>
<td>SUS 304</td>
</tr>
<tr>
<td>Diffuser Pipe</td>
<td>PVC</td>
</tr>
<tr>
<td>Collect Water Pipe</td>
<td>PVC &amp; SUS 304</td>
</tr>
</tbody>
</table>

5. Product Photo

群揚材料工業（股）公司  EF-MATERIALS INDUSTRIES INC.
桃園市中壢區長春六路 1 號 No.1, Changchun 6th Rd., Zhongli Dist., Taoyuan City, Taiwan
TEL:+886-3-4513736  FAX:+886-3-4513353  Email: Sharon@efmi.com.tw  http:// www.efmi.com.tw
POROUS CERAMICS BIO-REACTOR (PCBR)

1. Structure and Principle
A best technology of new model of Bio-filtration system in waste water treatment, which have a special porous ceramic media in the inner of bio-reactor. The ceramic media was made by composite inorganic materials, which have a good water affinity on the media’s surface, especial good for microbes breeding. Also have a high surface area on the surface of media to providing the biggest space and keep large volume of microbes in Bio-Reactor. An extremely durable property and a good property of chemical stability of media since the media was made by ceramic.

2. Purpose
A special physical designing for the bio-reactor, which could offer a big number of surface area on the ceramic media and good water permeability, it is good for microbes in adherence and breeding. Besides, the high water permeability could advance the interception rate for suspending solids from waste water that will promotional for the efficiency of waste water treatment.

3. Features
We have several years of good experiences in the operation by actual case, also have some projects study with institutes which encouraged by Taiwanese government. The installation of PCBR and it’s process are the best efficiency for waste water treatment, PCBR have an excellent durability then other traditional bio-medias, no more environmental pollution due to our product could be renewing or recovery by recycling way when it’s life cycle come to an end.

4. Specifications and Functions
(1) Product Specification: Ceramic / PP
(2) Size: D.20cmø & H.20cm
(3) Volume: 0.0042m³/pc.

5. Product Photo
BIO-REACTOR AND IT’S APPLIANCE IN HIGH PERFORMANCE SYSTEM FOR TREATMENT OF ORGANIC WASTEWATER.

1. Structure and Principle

(1) This system utilizes recycled porous ceramic as the carrier to provide a high surface area, which increases the efficiency of Bio-reaction and natural filtration.

(2) This system utilizes the bio-friendly nature of ceramic materials to add to the adherence and growth of biological membranes. The ceramic media have excellent affinity with microbes, good for microbes and germs adhere to the media also good for growth of microbes on the media.

(3) This system uses the semi-fixed method to suspend Bio-reactor in the pond of waste water. The Bio-reactor swings with water current to increase the rate of interception of organic contaminations in waste water.


(5) This system uses the smooth and round shape structure to prevent impacts of dripping incurred by water current.

2. Purpose

(1) A micro-organism carrier for bio-filtration systems.

(2) A media of micro-organisms for fertilizer composing.

3. Features

(1) A high surface area of bio-reactor (25,000m²/m³); good serving for high performance system; excellent stabilization for Bio-filtration.

(2) Using the semi-fixed method to suspend the Bio-reactor in the pond of wastewater which promotes metabolism of micro-organisms. At same time, due to its swing function, the aged and useless membrane of micro-organisms can be stripped off from the carrier spontaneously. No need for inverse wash. Easy to operate and maintain.

(3) Easy to installation; no need to stop water flow during installation or removal.
The bio-reactor creates a favorable environment for compounded organism clusters (aerobic, facultative aerobic, and anorexic) and original and meta organisms. Bio-sludge outcomes are lower than that of activated sludge process by 40%~60%.

High COD & BOD loading of Bioreactor, it is 200 times to the dimension ratio of traditional media type bio-filtrater.

Using compounded organism clusters and biological means to achieve wastewater treatment. Oxygen concentration requirement is lower than that of regular bio-sludge or bio-contact reaction methods, which enables savings on energy cost and equipment load for aeration operations.

The porous ceramic carriet is highly hydrophilous. Its open cell structure of is excellent for affinity of micro-organisms.

The bio-carriet is made of ceramic. Its high hardness and pressure resistence gives it the quality to sustain wear with high pilability.

### Specifications and Functions

**Size & material of item:**

1. Bio-carriet: 1.6cm x 2.2cm in cylinder shape with ceramic material.

2. Bio-reactor: A hollow and perforative round shape in diameter 20 cm with PP or PE material.

3. Easy adjustable in fill density of treatment system, it is depended on the size of the pond and the condition of contamination in water.

## Product Photo
AUTOMATIC SKIMMER

1. Structure and

   (1) The skimmer is vertical on the surface of wastewater, and moves forth smoothly on the tracks by coil chain.

   (2) When the skimmer go to the end of basin, it scrapes the scum into the drain pipe, then the turns 90° and makes it parallel to surface of wastewater and go backwards.

2. Purpose

   It is suitable to be equipped in sediment basin for scraping the grease and scum.

3. Features

   (1) Stainless steel structure is enough to against corrosion.

   (2) Automatic operation by means of programmed logic control.

   (3) Driven by coil chain, easy to maintain.

   (4) No movable mechanism under wastewater that make it is safe while the machine is been fixing.

4. Product Photo
SLUDGE COLLECTOR OF RECTANGULAR SEDIMENT BASIN

1. Structure and Principle
   (1) This machine consists of scraper suction modules with three tracks, driving unit and control panel.
   (2) The scraper – suction modules move stably on tracks. The module is equipped low and with inclined planes so that it doesn’t disturb sludge when it moves.
   (3) V-shape scraper lead the sludge go to suction holes that drive the sludge out of basin effectively.
   (4) The driving unit is equipped coil chain that push the scraper-suction modules to move.
   (5) Each force of suction holes is the same so that scraper-suction modules can exclude the sludge smoothly.
   (6) The control panel with programmed logic controller (PLC) makes the machine go automatically. According to the concentraction or height of sludge blanket, it can be set the operation conditions in PLC.

2. Purpose
   The machine is widely applied to rectangular sediment basin for driving the sludge out of the basin.

3. Features
   (1) Simple mechanical structure, easy operation and less maintaining cost over 50% than other kinds of sludge scrapers.
   (2) Save more than 80% in electrical consumption. All PLC automatic control.
   (3) All made with stainless steel. It is throught designs of three-track, special wheels and coil chain that keep sludge collector move smoothly.

4. Representative Attainments

<table>
<thead>
<tr>
<th>Style</th>
<th>Pool Width</th>
<th>Pool length</th>
<th>Reducer power</th>
<th>Suction pipe diameter</th>
<th>Suction sets</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY-400</td>
<td>4M 以下</td>
<td>below 4M</td>
<td>1/4HP</td>
<td>65mm</td>
<td>1set</td>
</tr>
<tr>
<td>SY-400L</td>
<td>4M 以下</td>
<td>below 4M</td>
<td>1/2HP</td>
<td>65mm</td>
<td>2set</td>
</tr>
<tr>
<td>SY-400XL</td>
<td>4M 以下</td>
<td>below 4M</td>
<td>1/2HP</td>
<td>65mm</td>
<td>2set</td>
</tr>
<tr>
<td>SY-600</td>
<td>6M 以下</td>
<td>below 6M</td>
<td>1/2HP</td>
<td>65mm</td>
<td>1set</td>
</tr>
<tr>
<td>SY-600L</td>
<td>6M 以下</td>
<td>below 6M</td>
<td>1/2HP</td>
<td>65mm</td>
<td>2set</td>
</tr>
<tr>
<td>SY-600XL</td>
<td>6M 以下</td>
<td>below 6M</td>
<td>1/2HP</td>
<td>93mm</td>
<td>2set</td>
</tr>
<tr>
<td>SY-800</td>
<td>8M 以下</td>
<td>below 8M</td>
<td>1/2HP</td>
<td>65mm</td>
<td>1set</td>
</tr>
<tr>
<td>SY-800L</td>
<td>8M 以下</td>
<td>below 8M</td>
<td>1/2HP</td>
<td>65mm</td>
<td>2set</td>
</tr>
<tr>
<td>SY-800XL</td>
<td>8M 以下</td>
<td>below 8M</td>
<td>1/2HP</td>
<td>93mm</td>
<td>2set</td>
</tr>
</tbody>
</table>
HIGH EFFICIENCY DISSOLVED AIR FLOTATION SYSTEM

1. **Structure and Principle**

DAF System uses transfer pump to put the High pressure Air and Water into the Air Dissolving Tank. The mixing material, air and water, is called “White Water”. When “White Water” mixes with the slurry in the system, it will release a lot of fine bubbles through the Treating Tank. The bubbles which attach the upper floc surface of the water become floating residues on the water upper surface above the tank. The scraper device or skimmer of the system will simultaneously remove the floating residues to clarify the liquid by separating the residues and water. Therefore, DAF System has functions both Floatation - Removing and sedimentation.

2. **Purpose**

For the Solid and Liquid Separation of Various Industry Sewage/ Chemical coagulation Treatment.

3. **Features**

The machine, solid-liquid equipment, is excessively suitable for conditions including small place and soft sludge. In addition, it is suggested to be employed with other different tanks to save the space of installment.

4. **Specification and Functions**

   (1) Air Dissolving Tank: make use of the vortex pump to feed the clean water and air (equal ratio) each into the Air Dissolving tank (Pressure: 3~4kg/cm² needed) to form the “White Water”.

   (2) Treating Tank: The wastewater mixed with the “White Water”, then feeding into the Treating Tank, the “White Water” will wrap up the residues and grease, meanwhile, rise up to the surface of the Treating Tank, then the skimmer plate remove the residues and grease to separate the liquid and solid.

5. **Product Photo**
PACKAGE TYPE HIGH EFFICIENCY DISSOLVED AIR FLOTATION SYSTEM

1. Structure and Principle

DAF System uses transfer pump to put the High pressure Air and Water into the Air Dissolving Tank. The maxing material, air and water, is called “White Water”. When “White Water” mixes slurry in the system, it will release a lot of fine bubbles through the Treating Tank. The bubbles which attach the upper floc surface of the water become floating residues on the water upper surface above the tank. The scraper device or skimmer of the system will simultaneously remove the floating residues to clarify the liquid by separating the residues and water. Therefore, DAF System has functions both Floatation - Removing and sedimentation.

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For the Solid and Liquid Separation of Various Industry Sewage/ Chemical coagulation Treatment.

3. Features

The machine, solid-liquid equipment, is excessively suitable for conditions including small place and soft sludge. In addition, it is suggested to be employed with other different tanks to save the space of installment.

4. Specification and Functions

(1) Air Dissolving Tank: make use of the vortex pump to feed the clean water and air (equal ratio) each into the Air Dissolving tank (Pressure: 3~4kg/cm² needed) to form the “White Water”.

(2) Treating Tank: The waste water mixed with the “White Water”, then feeding into the Treating Tank, the “White Water” will wrap up the residues and grease, meanwhile, rise up to the surface of the Treating Tank, then the skimmer plate remove the residues and grease to separate the liquid and solid.
INCLINED TUBE SETTLER

1. **Structure and Principle**
   This product consists of oblique plastic sheets tilted at a 60° angle, which are configured into a rectangular module.
   The diameter of each cellular pipe is approximately 50mm, which is placed inside the sediment tank for expansion of effective sedimentation surface.

2. **Purpose**
   Expedient sedimentation equipment

3. **Features**
   (1) High strength.
   (2) Easy installation.
   (3) Convenient maintenance.
   (4) Aesthetic appearance.
   (5) Adoptable to any sludge collection facilities.
   (6) Impervious to external factors.
   (7) The flow rectification and second condensation effect ensure capturing of floating gel flocs.

4. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Spec/Model</th>
<th>Pipe Diameter</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>I (mm)</th>
<th>W (mm)</th>
<th>H (mm)</th>
<th>L (mm)</th>
<th>Pipe Row</th>
<th>Sheet Gauge</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
<td>HCA-52</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>600</td>
<td>500</td>
<td>520</td>
<td>2,500</td>
<td>10</td>
<td>0.6/0.8/1.0</td>
<td>ABS</td>
</tr>
<tr>
<td>HCA-75</td>
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<td>50</td>
<td>50</td>
<td>860</td>
<td>500</td>
<td>750</td>
<td>2,500</td>
<td>10</td>
<td>0.8/1.0</td>
<td>ABS</td>
</tr>
</tbody>
</table>

5. **Product Photo**

相同企業有限公司 SIMILAR ENTERPRISE CO., LTD
台中市烏日區湧南路一段 506 巷 485 號
No. 485, Lane. 506, Sec. 1, His Nan Rd., Tong Yang Village, Wu Jih District, Taichung City, Taiwan
TEL : +886-4-2335-2827 FAX : +886-4-2335-2659 E-mail : same66@ms16.hinet.net http : //www.similar.com.tw
THE SCRAPER DRIVER

1. Structure and Principle
The scraper driver is applicable to circular sedimentation / thickening tank; the bridge can be half-bridge or full-bridge types. The scraper system is consisted of a driver, center column (for half-bridged type only), platform, walkway, torque cage, scrapping arms, feed well, scum box, overflow weir, etc. Wastewater flows into the sedimentation tank through the feed well; the suspension solids coagulate and then settle to the bottom of tank. By scraper, the solids accumulated on the bottom of the tank shall be collected to the center sludge well for drawn out.

2. Purpose
Sedimentation tank or thickener sludge scrapping.
Sedimentation tank or sludge thickener.

3. Features
(1) High Transmission Efficiency: The main reduction mechanism is composed of planetary gear reducer, the transmission efficiency is high and space saving.
(2) Manual Rotating System: Can be rotated manually for tank bottom finishing.
(3) Overload Protection System: The operation torque is indicated on the indicator. Alarm and power shut-off system are equipped for overload protection.
(4) Easy Installation and Maintenance: All installation and maintenance are completed on the operation floor easily and safely.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Type</th>
<th>Tank Diameter</th>
<th>Operation Torque</th>
<th>Acceptable</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD</td>
<td>Half Bridge</td>
<td>8m and above</td>
<td>1,250 ~ 20,000kg-m</td>
<td>Sedimentation Central Bottom Influent</td>
</tr>
<tr>
<td>CDF</td>
<td>Full Bridge</td>
<td>8m and above</td>
<td>1,200 ~ 6,000kg-m</td>
<td>Sedimentation Central Top Influent</td>
</tr>
<tr>
<td>TD</td>
<td>3 ~ 8m</td>
<td>200 ~ 800kg-m</td>
<td></td>
<td>Central Influent</td>
</tr>
<tr>
<td>TDH</td>
<td>Full Bridge</td>
<td>8m and above</td>
<td></td>
<td>Central Influent</td>
</tr>
<tr>
<td>TDR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Product Photo

健鑫環境工程股份有限公司
H PLUS R ENVIRONMENTAL ENGINEERING CO., LTD
新北市新莊區化成路 354 號 8 樓 8F,No.354,Hua Cheng Rd., Hsin-Chuang District, New Taipei City, Taiwan
TEL : +886-2-2276-9961  FAX : +886-2-2276-9962
E-mail : hplusr@ms15.hinet.net   http://www.hplusr.com.tw/first.htm
DISSOLVED AIR FLOTATION SYSTEM

1. Structure and Principle
Dissolved air flotation system is an advanced equipment combined flotation and settling functions. High surface loading, short retention time and shallow water depth were uniqueness of this system compared to the conventional designs. The air is pressurized to be dissolved in the Air Dissolving Tube, and the fine bubbles will be released when it is discharged into the open basin. The diameter of fine bubble is 1 μm approximately and the flotation velocity is about 15cm/min. The flocs in the solution will be attached by fine bubbles and floated to the top of water. The flotation process will be completed within 3 minutes and consistency of buoyant sludge is 2~3% solid content.

2. Purpose
(1) Grease and suspension solids removal.
(2) Sludge thickening.

3. Features
(1) Short retention time.
(2) Low purchase cost.
(3) Low installation cost.
(4) Minimum space requirement.
(5) Thickened sludge consistency is 2~3%.
(6) Easy to clean and maintain.

4. Specifications and Functions

![Diagram of Dissolved Air Flotation System]

1. Flotation cell
2. Central rotation bearing
3. Influent distributor
4. Distribution rack and driver
5. Clear water discharge pipe
6. Clear water outlet tank
7. Discharge weir
8. Leveling facility
9. Operating platform
10. Surface scraper
11. Rotation driver
12. Sight glass
13. Slipring

健鑫環境工程股份有限公司
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E-mail : hplusr@ms15.hinet.net   http://www.hplusr.com.tw/first.htm

— 79 —
Water and Wastewater Treatment and Recycling Equipment
Flotation and Sedimentation Equipment

<table>
<thead>
<tr>
<th>Model</th>
<th>Outline Dimension (mm)</th>
<th>Capacity (m³/hr)</th>
<th>Civil block out (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>HRAF-32</td>
<td>3,200</td>
<td>600</td>
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<td>HRAF-39</td>
<td>3,900</td>
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<td>950</td>
</tr>
<tr>
<td>HRAF-61</td>
<td>6,100</td>
<td>650</td>
<td>950</td>
</tr>
<tr>
<td>HRAF-67</td>
<td>6,700</td>
<td>650</td>
<td>950</td>
</tr>
<tr>
<td>HRAF-72</td>
<td>7,200</td>
<td>650</td>
<td>950</td>
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<td>HRAF-81</td>
<td>8,100</td>
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</tr>
<tr>
<td>HRAF-90</td>
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<td>950</td>
</tr>
<tr>
<td>HRAF-100</td>
<td>10,000</td>
<td>650</td>
<td>950</td>
</tr>
</tbody>
</table>

5. Product Photo

6. Award (Certified) Items

   (1) The product is ISO-9001: 2000 certified for design, manufacturing and installation.

   (2) Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999.
INCLINED TUBE SETTLER

1. Structure and Principle
(1) Space saving: The precipitation distance of particles in inclined tube settler is shortened to be h, compared to the precipitation distance in empty tank H, (H/h) times of sedimentation tank surface area was saved.
(2) The inclined tube settler was made of PVC or ABS.
(3) Simply installed the individual module in sedimentation tank and function well.
(4) The tube is formed at 60 angles versus horizontal and in reverse direction to neighboring tubes in forming criss-cross configuration in module.
(5) The assembled module is rectangular and opening is 50mm.

2. Purpose
(1) Optimize efficiency of new sedimentation tank: For constricted space this system offers excellent sedimentation efficiency at tremendous cost saving.
(2) Improvement of existent sedimentation tank: Increasing the sedimentation efficiency of existent tank by installation of this system.

3. Features
(1) Excellent water quality: By rectification of flow and secondary coagulation, all flocs were captured.
(2) High strength: The assembled unit can withstand 2 kg/cm² jet pressure at 2m distance from top without damage.
(3) Easy installation: Simply secure the modules on support frame.
(4) Easy maintenance: No bend and surface smooth make cleaning and maintenance easy.
(5) Aesthetic appearance: No hungers above tank. Easy monitoring from surface and neat looking.
(6) Adaptable to any sludge collection facilities: As no barrier on tank bottom, there is no limitation in selection the sludge collection method.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>Tube Width (mm)</th>
<th>Tube Height (mm)</th>
<th>Tube Length (mm)</th>
<th>Tube Number</th>
<th>Tube Thickness</th>
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<tbody>
<tr>
<td>HRT50</td>
<td>50×50</td>
<td>550</td>
<td>500</td>
<td>2,500</td>
<td>11×50</td>
</tr>
</tbody>
</table>

5. Product Photo

健鑫環境工程股份有限公司
H PLUS R ENVIRONMENTAL ENGINEERING CO., LTD
新北市新莊區化成路354號8樓  8F,No.354,Hua Cheng Rd., Hsin-Chuang District, New Taipei City, Taiwan
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E-mail : hplusr@ms15.hinet.net  http://www.hplusr.com.tw/first.htm

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HIGH EFFICIENCY AIR FLOATING EQUIPMENT

1. Structure and Principle
   The high efficiency air floating equipment is an advanced fast air-floating system that has successfully applied the shadow-pool theorem and “zero speed” theory. The water-immersed portion of tank, framework, water inlet distribution vehicle platform, flow-conduction plate, level control weir, outlet pipe, dross scratching mechanism and air dissolving pipe are constructed by SUS304; the bar grating plates, railway and reinforcements are made by SS400; and equipment strength is no less than 1500kg/M². Under full water condition, loading at base seat and supporting frame won’t exceed 750kg/M².

2. Purpose
   This equipment is widely applied to city water, sewage and wastewater of a wide variety; it can perform high efficiency to recycle write water & fiber and purify water quality.

3. Feature
   (1) Unit weight is extreme light.
   (2) Water-holding time is only 3 minutes.
   (3) Processing capacity is huge.
   (4) Operation land area is relatively small, lighter in unit weight; entire equipment is preassembled that needs no site assembly space; equipment can be built on stilts or assembled by several different floors (layers) together.
   (5) Low installation and repair cost; easy to disassemble and clean up.
   (6) High purifying grade.
   (7) Lower down suspending solid concentration.
   (8) Low construction price.

4. Product photo

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RYOSEI ENVIRONMENTAL INDUSTRIAL CO., LTD.
新北市土城區中央路二段 191 號 8 樓之 3
8-3F., No.191, Sec. 2, Zhongyang Rd., Tucheng Dist., New Taipei City, Taiwan
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E-mail : ryosei7603@yahoo.com.tw  http : // www.twimc.com.tw
SEDIMENT POOL, ROUND SLUDGE SCRAPER

1. Structure and Principle
   The round sludge scraper is equipped in round sediment pool (wastewater pool), using slow, uniform rotating speed and shortest scraping distance to constantly collect sludge and discharge it or temporarily stored in pool bottom, facilitating the sludge to concentrate and discharged out automatically through sludge discharge valve, reaching the best sludge collection effort.

2. Purpose
   (1) Operated along with sediment pool in wastewater or sewage treatment plant; applied to promote the sediment pool efficiency and separation effect of solid and liquid.
   (2) Solid/liquid separation in industrial process.
   (3) Solid/liquid separation in farming or livestock farming application.
   (4) Any occasion that needs to scrape off sludge and dross or floating oil.

3. Feature
   (1) Scrape against dross and sludge after solid/liquid separation to sufficiently display the sediment pool effectiveness.
   (2) Low speed operation; small driving power and insignificant power consumption.
   (3) Can add torque overload protection device to secure machine with normal operation lifetime.
   (4) Professional design, fabrication, installing and commissioning process, operation stability and safety is outstanding.
   (5) Bearing and scraping equipment are under high-grade anti-rust treatment.
   (6) Adjustable overflow weir can coordinate to the design of water treating capacity; big capacity flexibility.

4. Product Photo

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Ryosei Environmental Industrial Co., Ltd.

Address: 3F., No.191, Sec. 2, Zhongyang Rd., Tucheng Dist., New Taipei City, Taiwan
TEL: +886-2-2381-1668 FAX: +886-2-2371-2769
E-mail: ryosei7603@yahoo.com.tw http://www.twimc.com.tw
NON-CLOG SEWAGE (MUD) PUMP

1. Structure and Principle

Different places require pumps with different impellers. The C-series products consist of different types of pumps such as vertical dry-pit, horizontal dry-pit, submersible or submersible dry-pit, and may also adopt impellers of different types such as non-clog, cutting knife or recess type according to the waste properties. Regarding cooling system of motors, there are options like water cooling, and oil cooling. Other functions are automatic control system, overload protection, leakage testing, temperature sensing, and anti-explosion motor and etc. The motor may be customized according to the customer requirements.

2. Application

(1) Wastewater pump station
(2) Domestic wastewater treatment plant
(3) Agricultural and pasturage wastewater treatment system
(4) Domestic wastewater process system for hospital, school, and residential community
(5) Water treatment system for industries such as food, paper manufacturing, coalmining, textile, leather-making, and chemical factories.
(6) Water purification system.

3. Features

(1) Submersible Motor
   A. Performance in compliance with the standard (CNS9813: Low Pressure Three-Phase Sensing Motor for Submersible Pump) and qualified for a certified mark.
   B. Class-F insulation and the protection level is IP68
   C. Heat Sink Options:
      (a) Water Cooling: the advantages: may be operated even at a low water level or installed on the ground, low noise.
      (b) Oil cooling system: adopts insulating oil with the heat exchange system: the advantage: may be operated even at a low water level or installed on the ground, low noise.
      (c) General cooling method uses the surrounding fluid to cool naturally.

D. Other functions such as overload protection, temperature sensing and etc may be customized in accordance with the customer requirements.
(2) Motor
A. In compliance with the Fully-Sealed Fan-Cooling Three-Phase Squirrel Cage Sensing Motor of the CNS14400 Standard
B. The parameter is 1.15, and other characteristics such as the insulation level, anti-explosion, frequency inversion, and etc may be provided according to the customer requirements.

(3) Impellers
A. Precision process and balanced calibrations to ensure stable operations.
B. Types:
(a) Non-Clog Impellers: Special design to enlarge the water flow path; smooth water flow allows easy waste material passage thus consideration of clogging is not required.
(b) Cutting Knife Impellers: The impellers are semi-open non-clog type. Tungsten knife blade is embedded into the impeller entrance and a long fiber object or soft object is designed based on the rubbing plate. (Rubbing plate: The material is ball-shaped graphite cast iron, thus enhancing the resistance to friction and maintaining the performance)
(c) Recess Impellers: Impellers are hidden outside of the flow way, and thus are capable of causing an eddy inside the pump, particularly useful for transmission of wastewater containing strands, pieces of debris and fibers.

4. Product Photo
HORIZONTAL SINGLE STAGE SCROLL PUMP

1. Structure and Principle
   This pump is a single stage centrifugal pump designed in accordance with ISO2858. The pump has a superior performance, and high efficiency. It is primarily used for pure water or liquids that are chemically and physically similar to water. The structure is reasonable and may be reliably used.

2. Purpose
   Domestic water supply, industrial water supply, factor process, agricultural irrigation, construction water supply, boiler water supply, air conditioner, cooling water.

3. Features
   (1) Pump Exterior: Casted using cast iron with holes for air evacuation; tested to be able to withstand 1.5 times of the maximum water pressure; there is no sign of leakage after 5 minutes of continuous pressurization. The standard material is grey cast iron, complying with CNS2472 G3038.
   (2) Impellers: Fully sealed with a balanced hole design and tightly locked on the axle after dynamic and static balance calibrations. The standard material is either grey cast iron or optional bronze cast, complying with CNS2472, G3038 or CNS4125, H3057.
   (3) Wear Ring: The pump exterior is installed with bronze wear rings that comply with CNS4125 and H3057 and are fixed using screws.
   (4) Main Shaft: The standard is stainless steel, complying with CNS3270 G3067 and comes with steel-made nut that complies with CNS2473 G3039 so as to prevent loosening due to activation. The design of the strength of the shaft center is of a high standard, allowing the threshold rotational speed of the shaft to be higher than 1.3 times of the normal operation speed.
(5) Seal: Internationally well-known mechanical seal; operating pressure is 0-10kg/cm² and the operating temperature range is between -20~100°C; may use filling seal as designated by customers.

(6) Bearing: Adopts sealed self-lubricating ball bearing free of adding grease, thus complying with AFBMA B-10; life of the bearing is stated on the manual.

(7) Seal Base and Seal Chamber: The structure is designed in accordance with the standard small scroll pump of CNS2138 B4004. Bolts can be unscrewed to remove shaft seal and the bearing base without uninstalling the pump exterior, thus facilitating maintenance work.

(8) Shaft Coupler: Pump exterior comes with a supporting frame that is fixed on the steel base with the motor. Both are connected using a shaft coupler to be driven on the same shaft center. The exposed operating components are covered by protection masks.
AS TYPE APPARATUS USE SEWAGE SUBMERSIBLE PUMP

1. Structure and Principle

(1) Equipped with weatherproof and waterproof cable. Wiring and core wire are impregnated with EPOXY. Not only avoid the moist going into the motor, but also leakage-proof and moisture-proof.

(2) All series motors are equipped with dry motor of 3-phase and 2 poles or 4 poles, coil of class F insulation. It is the character of overheat-resistant and perfect isolation. Enclosure is IP68 grade of protection.

(3) The material of silicon carbide has the character of mud-resistant and excellent lubrication system and is good for long-time running. The dual enclosed structure has a diaphragm; it is preventing strongly from leaking.

(4) Pump is equipped with the motor overload protector and will shut itself off automatically to prevent from overheating whenever its voltage drop, impeller plugged, the draining line is below the pump's watermark and other unusual conditions.

(5) Pump is coated with thick EPOXY. It is better corrosion-resisting and rust-resisting than common paint; prevent the surface of pump from rusting.

(6) Fitted with vent valve at discharge side of pump casing to avoid air lock ensuring pumping system in steady operation.

2. Purpose

(1) Building waste water treatment system, sewage treatment plant, community market, sanitary sewer.

(2) Drainage waste water from paper industry, dyeing industry, foodstuff industry, leather industry and iron and steel industry.

(3) Fishery, animal husbandry, dairy farm, piggery, fecal sewage tank and indu-stry water supply.
3. Features

(1) Pump is equipped with the motor overload protector and will shut itself off automatically to prevent from overheating whenever its voltage drop, impeller plugged, the draining line is below the pump's watermark and other unusual conditions.

(2) There are 3 kinds of impellers as the pictures. You can choose semi-open, closed and non-clogging. Suitable model will help you to do with properly all kinds of drainage of waste water or sewage.

(3) Equipped with automatic lifting frame device. By simply installation to fix the water pipe in the saddle of frame body. It is easy to maintain or replace the pump by loading & unloading, separation and combination. It is not necessary for the operator to go into the tank and increase effectively the safety and convenience.

4. Product Photo

5. Specifications and Functions

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Picture Type</th>
<th>Type</th>
<th>Power</th>
<th>Caliber</th>
<th>Pole</th>
<th>Head</th>
<th>Flow</th>
<th>Solid Passage</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS Type Apparatus Use Pump</td>
<td>Semi-open Channel Non-clog</td>
<td>3</td>
<td>2~20</td>
<td>3~8</td>
<td>2 or 4</td>
<td>5~23</td>
<td>0.5~4.5</td>
<td>32~80</td>
</tr>
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</table>
B TYPE NON-CLOG SEWAGE SUBMERSIBLE PUMP

1. Structure and Principle
   (1) For preventing moisture from gaps of cable or wire into motor,
       The cable base and wire are dealt with EPOXY.
   (2) Non-clog Impeller design allows to discharge 35mm solid passage and long fiber.
   (3) Vortex Impeller and taper flowing route improve the performance of pump and decrease the abrasion to extend the durability.
   (4) Fitted with vent valve at discharge side of pump casing to avoid air lock ensuring pumping system in steady operation.
   (5) Equipped with high quality dual mechanical seal or with SIC mechanical seal.
   (6) Motor is E (120°C) class insulation, enclosure IP 68. The thermal protector is optional to secure the protection of motor, which against overload & overheating.
   (7) Simplifying the structure (Bearing and Mechanical Seal) of the inside of Motor for improving the operation of Motor.
   (8) Pump is equipped with the motor overload protector and will shut itself off automatically to prevent from overheating whenever its voltage drop, impeller plugged, the draining line is below the pump's watermark and other unusual conditions.

2. Purpose
   (1) Wastewater lift station, municipal wastewater treatment plant.
   (2) Building wastewater treatment system.
   (3) For using to drawing out piggery's excrement, animal & poultry farm.
   (4) School, hospital, community wastewater treatment system.
   (5) Food, Paper, mining, textile, leather industry wastewater treatment system.
3. **Features**

(1) Pump is equipped with the motor overload protector (TEXAS Instrument) and will shut itself off automatically to prevent from overheating whenever its phase failure, voltage drop, impeller plugged, the draining line is below the pump's watermark and other unusual conditions.

(2) The non-clog design is fitted to 35mm solid passages and the liquid with long Fiber; Impeller doesn’t touch the liquid so reduce Impeller’s abrasion.

(3) Uipped with automatic lifting frame device. By simply installation to fix the water pipe in the saddle of frame body. It is easy to maintain or replace the pump by loading & unloading, separation and combination. It is not necessary for the operator to go into the tank and increase effectively the safety and convenience.

4. **Product Photo**

![Product Photo](image)

5. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Picture</th>
<th>Type</th>
<th>Power hp</th>
<th>Caliber inch</th>
<th>Pole P</th>
<th>Head M</th>
<th>Flow M³/min</th>
<th>Solid Passage mm</th>
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</thead>
<tbody>
<tr>
<td>B Type Non-clog</td>
<td>Non-clog</td>
<td>1 &amp; 3</td>
<td>1/2~10</td>
<td>2~4</td>
<td>2</td>
<td>5~20</td>
<td>0.17~0.78</td>
<td>35~50</td>
</tr>
</tbody>
</table>

【HENG LONG ELECTRIC CO., LTD.】

高雄市湖内區太爺村中山路二段2巷17弄14-2號
No. 14-2, Alley 17, Lane 2, Sec 2, Jhongshan Rd, Hunei District, Kaohsiung City, Taiwan
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E-mail : henry.g5858@msa.hinet.net   http:// www.henglong.com.tw

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91
P TYPE STAINLESS STEEL ENVIRONMENTAL PUMP

1. Structure and Principle
   (1) Pump cover made from SUS#316 resists wastewater with weak-acid and weak-alkalinity.
   (2) For preventing moisture from gaps of cable or wire into motor, the cable base and wire are dealt with EPOXY.
   (3) Non-clog Impeller design allows to discharge 35mm solid passage and long fiber.
   (4) Vortex Impeller and taper flowing route improve the performance of pump and Decrease the abrasion to extend the durability.
   (5) Fitted with vent valve at discharge side of pump casing to avoid air lock ensuring pumping system in steady operation.
   (6) Equipped with high quality dual mechanical seal or with SIC mechanical seal.
   (7) Motor is E（120℃）class insulation, enclosure IP 68. The thermal protector is optional to secure the protection of motor, which against overload & overheating.
   (8) Simplifying the structure (Bearing and Mechanical Seal) of the inside of Motor for improving the operation of Motor.
   (9) Pump is equipped with the motor overload protector and will shut itself off automatically to prevent from overheating whenever its voltage drop, impeller plugged, the draining line is below the pump's watermark and other unusual conditions.

2. Purpose
   (1) Wastewater lift station、municipal wastewater treatment plant.
   (2) Building wastewater treatment system.
   (3) For using to drawing out piggery's excrement, animal & poultry farm.
   (4) School, hospital, community wastewater treatment system.
   (5) Food, Paper, mining, textile, leather industry wastewater treatment system.

3. Features
   (1) Pump is equipped with the motor overload protector (TEXAS Instrument) and will shut itself off automatically to prevent from overheating whenever its phase failure, voltage drop, impeller plugged, the draining line is below the pump's watermark and other unusual conditions.
The non-clog design is fitted to 35mm solid passages and the liquid with long Fiber; Impeller doesn’t touch the liquid so reduce Impeller’s abrasion.

(3) equipped with automatic lifting frame device. By simply installation to fix the water pipe in the saddle of frame body. It is easy to maintain or replace the pump by loading & unloading, separation and combin-ation. It is not necessary for the operator to go into the tank and incre-ease effectively the safety and convenience.

5. Specifications and Functions

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Picture</th>
<th>Type</th>
<th>Power hp</th>
<th>Caliber inch</th>
<th>Pole P</th>
<th>Head M</th>
<th>Flow M³/min</th>
<th>Solid Passage mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>P Type Stainless Steel Pump</td>
<td>Non-clog</td>
<td>1 &amp; 3</td>
<td>1/2~10</td>
<td>2~4</td>
<td>2</td>
<td>5~20</td>
<td>0.17~0.78</td>
<td>35~50</td>
</tr>
</tbody>
</table>
SUBMERSIBLE PUMP

1. Structure and Principle
   (1) Dry Motor: The dry immersed-induction-powered design takes motor startups, load, durability and temperature fluctuation into consideration to offer an equipment of outstanding efficiency.
   (2) Cable Base: The waterproof feature is reinforced; the cable strands are epoxy treated to completely forestall moisture from entering the motor via cable to attain effective leakage and humidity prevention.
   (3) Protective Devices
      A. Motor Protector: Fitted with auto restore overload protector so that when motor current and temperature is too high, the protector will be triggered to cut off power supply to prevent motor overheating.
      B. MTP, motor heating protection
      C. WD, wire leak detector
      D. BTP, bearing heating protector
   (4) Dual-set mechanical sealing: Dual sets provide two folded flaps that prevent moisture and seal against leakage concurrently, which are also durable for prolonged operation. A wide choice of materials can be selected to suit the operating environment; generally carbon or the more durable silicon carbide are used.

2. Purpose
   (1) Community, market, sewer, general wastewater treatment plant, building basement sewage treatment equipment.
   (2) Wastewater draining for food, leather, pulp, dye industries.
   (3) Wastewater treatment for husbandry, dairy, hog manure tanks.
   (4) Draining of gardening water, fish farm, and agricultural remains.
   (5) Draining of rainwater, groundwater.
   (6) Supply and drain of industrial and other applications.
3. Features

(1) CNS certified: excellent weather-resistant waterproof cable, motor protector, silicon carbide sealing, quality cast parts, outstanding performance.

(2) Multi-blade design, P/U/E blades enable optimal draining functions for wastewater carrying solids or fibers.

(3) Dual-set mechanical sealing: employ advanced silicon carbide material that offers excellent wear and thermal durability, as well as lubrication for complete waterproofing and prolonged use.

(4) Full range of models from low-course (turbine) to high course; small equipment volume enables easy installation and operation, and available in TOS model.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Power (hp)</th>
<th>Discharge (inch)</th>
<th>Head (m)</th>
<th>Capacity (m³/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF Wastewater Pump</td>
<td>1~120</td>
<td>2” ~ 20”</td>
<td>2~40</td>
<td>0~50</td>
</tr>
<tr>
<td>BF Light Waste Pump</td>
<td>1/2~3</td>
<td>2” ~ 3”</td>
<td>2~21</td>
<td>0~1.0</td>
</tr>
<tr>
<td>AL Light Wastewater Pump</td>
<td>1/2~10</td>
<td>2” ~ 4”</td>
<td>2~40</td>
<td>0~2.0</td>
</tr>
<tr>
<td>S Stainless Steel Pump</td>
<td>1/2~10</td>
<td>2” ~ 4”</td>
<td>2~30</td>
<td>0~2.1</td>
</tr>
<tr>
<td>A Wastewater Pump</td>
<td>1/2~3</td>
<td>2” ~ 4”</td>
<td>2~30</td>
<td>0~1.1</td>
</tr>
<tr>
<td>F Waste Pump</td>
<td>1/2~5</td>
<td>2” ~ 3”</td>
<td>2~27</td>
<td>0~1.2</td>
</tr>
</tbody>
</table>
AR SUBMERSIBLE AERATOR

1. Structure and Principle
   The aerator makes use of the motor to directly drive the rotation of impellers, so as to induce a centrifugal force to suck in water at a low pressure. Vacuum is created at the impeller entrance to suck the air into the air-mixing chamber. After mixing water with the air, water is ejected at a fast speed due to the centrifugal force. In addition to causing effective convection loop, many fine air bubbles are also generated and the oxygen is dissolved into water while the air bubbles rise up slowly.

2. Purpose
   Water purification, water and sewage treatment, public hazard handling, oxygen supply for agricultural cultivation, and other various aerations of industrial wastewater.

3. Feature
   (1) Directly driven by submersible motor, low noise and high efficiency.
   (2) Unique air-mixing chamber design, high air suction capacity, good mixing effect, aeration with the stirring function.
   (3) Adopts double layer mechanical seal, thus extending the motor life.
   (4) 12-way water radiator (14-way water radiator requires greater power) generates massive amount of air bubbles.
   (5) Meshed water entrance prevents the impellers from being jammed by foreign particles.
   (6) Guide rails may be installed for easier installation and maintenance.

4. Product photo
JET AERATOR (JAX)

1. Structure and Principle

This jet aerator allows the water to flow through the nozzle base, which connect with the pump outlet, and be ejected into the air-mixing chamber at a high speed. As the water flows through the nozzle at a high speed, a negative pressure is generated to guide the air into the air-mixing chamber via the air guide tube to combine with the water flow. Subsequently, prior to ejecting as water, a patented static stirring device stirs and cuts the air bubbles into finer bubbles, which are emitted via an expansion tube, thus causing the stirring and aeration effects.

2. Purpose

Water purification, water and sewage treatment, public hazard handling, oxygen supply for agricultural cultivation, and other various aeration of industrial wastewater.

3. Feature

   (1) Highly efficient oxygen dissolving: unique air-mixing chamber and static stirring device design; high air suction capacity; well mixed with water; many fine air bubbles generated; high air dissolving rate.

   (2) Sufficient stirring: impellers generate pressures and eject strong water flow via the nozzle to cause air-mixing, thus allowing the oxygen to move in the water with high efficiency and achieving a good stirring effect at the same time; the required flow speed of the active mud flow may also be maintained.

   (3) Quiet and noiseless: this set of machine is designed to operate in water at a low rotational speed and with low noise; the air entrance guide tube above the ground may be equipped with a silencer, other than that, no other silencer is required to reduce the cost.

   (4) Easy installation and maintenance: auto setter can be requested is available; easy installation and maintenance thus saving the operation cost.

4. Product photo
SURFACE AERATOR

1. Structure and Principle

This aerator makes use of the motor to directly drive the rotation of axial impellers so as to eject wastewater using guide tubes via guiding boards such that a thin water curtain (or water droplets) is formed. In addition to being in contact with the air while floating, water flow and massive amount of air bubbles are also generated when the water curtain drops to hit the liquid surface so as to increase the oxygen concentration in the water. Also, the water at the bottom is sucked to form a water loop, which serves as a stirring purpose.

2. Purpose

Water purification, water and sewage treatment, public hazard handling, oxygen supply for agricultural cultivation, and other various aerations of industrial wastewater.

3. Feature

(1) Motor: motor is installed above the water ejection region; sealed fan cooling and class-F insulation.

(2) Shaft: stainless steel.

(3) Impeller: made of stainless steel.

(4) Floating units: The casing of floating unit is composed of strengthened glass fibers and the inside of the unit is filled with high density polyethylene foam.

4. Product photo
**SPOUT AERATOR**

1. **Structure and Principle**
   
   (1) JP aeration structure
   Submerged aerator blades propel liquid to pass a small-diameter pipe to form powerful jet flow, which creates negative pressure in the mixing chamber; the pressure variation from the atmosphere sucks air into the mixing chamber, and the pressure created by water impacts compresses air into micro bubbles. The bubbles then fuse into water. In the diffusion pipe, air bubbles continue to infuse, elevating the oxygen concentration. After passing through the diffusion pipe, a powerful flow of water is spouted out to create excellent blending circulation and oxygen supply, which expands the range of aeration.

   (2) The bottom is fitted with a filter to block off large sediments from clogging the spout pipe or blades and causing lowered aeration efficiency.

   (3) For the auto engage model, the aeration pipeline is designed at the side of the pump for convenient maintenance.

2. **Features**
   
   (1) Unique mixing chamber design enables more air suction for more air bubbles to achieve optimal aeration.

   (2) Effective blade design enables application in a wide range of environment.

   (3) Submerged aerator design offers quiet operation; muffler may be fitted on the landed suction pipe to reduce noise. Compared to land blast furnace, the equipment saves surface space and cost for building muffler facilities.

   (4) Mono-unit design offers simple, easy to understand system without complex pipeline. It is also fitted with auto engage/disengage device for greater convenience.

3. **Purpose**
   

   (2) Stirring for landscape ponds or various tanks to deter sedimentation or decomposition.

   (3) Aeration for farms, general ponds and tanks.
## 4. Specifications and Functions

<table>
<thead>
<tr>
<th>Suction Pipe Disc. (mm)</th>
<th>TYPE</th>
<th>Output (hp)</th>
<th>Air Volume / Depth (m³/h-3m)</th>
<th>Capacity (m³/h)</th>
<th>Air Supply (kgO₂/h)</th>
<th>Max Depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>B</td>
<td>JP-21 1</td>
<td>10</td>
<td>21</td>
<td>0.35~0.45</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP-32 2</td>
<td>24</td>
<td>40</td>
<td>1.1~1.3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP-33B 3</td>
<td>30</td>
<td>48</td>
<td>1.4~1.6</td>
<td>4.5</td>
</tr>
<tr>
<td>25</td>
<td>A</td>
<td>JP-08 1</td>
<td>10</td>
<td>21</td>
<td>0.35~0.45</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP-15 2</td>
<td>24</td>
<td>40</td>
<td>1.1~1.3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP-33A 3</td>
<td>30</td>
<td>48</td>
<td>1.4~1.6</td>
<td>4.5</td>
</tr>
<tr>
<td>32</td>
<td></td>
<td>JP-22A 3</td>
<td>38</td>
<td>60</td>
<td>1.9~2.2</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP-37A 5</td>
<td>64</td>
<td>90</td>
<td>2.9~3.4</td>
<td>5</td>
</tr>
<tr>
<td>50</td>
<td></td>
<td>JP-55 7.5</td>
<td>105</td>
<td>120</td>
<td>6.1~7.0</td>
<td>6</td>
</tr>
</tbody>
</table>
HIGHER EFFECTIVE FINE BUBBLE DIFFUSSEUR

1. Structure and Principle
   Use polymer long fiber to weave into diffuser membrane attached with a cone checked valve; making the process water under air exposing won’t enter into air pipeline. This equipment is made by ABS material.

2. Purpose
   Supply oxygen into water to elevate oxygen content and attribute activity to aqua-creatures.

3. Features
   High strength, endurable to high temperature (204~240°C); good performance (can be long-term operated at 150°C environment), anti-aging, anti-UV, anti-acid/caustic and low air pressure loss.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Specification</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>ψ300mm</td>
</tr>
<tr>
<td>Joint</td>
<td>ψ3/4” NPT</td>
</tr>
<tr>
<td>Ventilation membrane</td>
<td>A high polymer</td>
</tr>
<tr>
<td>Exposing capacity</td>
<td>0.06~0.2 m³/min</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>&gt;15kgf/25cm</td>
</tr>
<tr>
<td>Extension capacity</td>
<td>&lt;35%</td>
</tr>
<tr>
<td>Base wt.</td>
<td>220±15 ± g/m²</td>
</tr>
<tr>
<td>Thickness</td>
<td>0.425±0.025 mm</td>
</tr>
</tbody>
</table>

5. Product Photo

![Product Photo](image-url)
CAST MONO & MULTI-SECTION CENTRIFUGAL BLOWER

1. Structure and Principle
   A type of air machinery that utilises centrifugal compression to compress air to the required pressure.

2. Purpose
   High efficiency, low noise, no pulsation, air conveyed carrying no fuel, marginal vibration.
   Applicable for incinerator air supply, flue-gas equipment air supply, mechanical processing, manufacturing, and various factory emissions.

3. Specifications and Functions
   (1) Air supply: over 1~300m³/min.
   (2) Pressure: up to 500~9,000mmAq.
   (3) Horsepower: 1~50hp.

![Product Photo](image-url)
NIGHTSTOOL WITHOUT BAD SMELL TYPE

1. Structure and Principle
   (1) Go against and stop the valve, will not smell others' home having the tuba, from the stink that adverse current comes in among the channels.
   (2) Water case lid and smoking the air pump Pu that so long as changes the nightstool, namely become the nightstool without bad smell type variably.

2. Purpose
   Nightstool without bad smell type.

3. Features
   (1) Will not smell the top one user's stink.
   (2) Enter the public lavatory, will not smell that someone is in the large size stink.
   (3) Go against and stop the valve, will not smell others' home having the tuba, from the stink that adverse current comes in among the channels.
   (4) Water case lid and smoking the air pump Pu that so long as changes the nightstool, namely become the nightstool without bad smell type variably, with low costs.

4. Specifications and Functions
   (1) After the living beings in the water case lid of the nightstool strain the bed to resolve, have no stink to arrange to the air of the atmosphere.
   (2) Water case lid have certain aqueous vapor, biomembrane like moss can natural to grow up, form the ecosystem of the balance, does not need any consumptive material, does not need maintenance cost.

5. Product Photo

大陸水工股份有限公司
CONTINENTAL WATER ENGINEERING CORP.
台北市承德路二段 137 號 12 樓之 4　12F-4, No. 137, Sec. 2, Cheng Teh Rd., Taipei, Taiwan
TEL: +886-2-2553-6015 FAX: +886-2-2557-6553 E-mail: cgg@ms22.hinet.net　http://www.pollution.com.tw
FRP SCRUBBER/TANK

1. Structure and Principle
The method employs resin as the base material and glass as reinforcement in forming barrel tank via winding; resin is selected according to the intended liquid property. The barrel interior is built with anticorrosion coating and additional reinforcement; the former is capable of withstanding any chemical, whereas the latter is to bolster barrel strength.

2. Purpose
(1) Tank.
(2) Reactive tank.
(3) Delivery tank.
(4) Wastewater tank.
(5) Suction tank.
(6) Cleaning tank.
(7) Electrolysis tank.
(8) Neutralization tank.
(9) Mixing tank.
(10) Pure water tank.

3. Features
(1) Capable of resisting strong acids and alkalis.
(2) Super strength.
(3) Light weight.
(4) Can be customized to client’s requirement.
(5) Anti-corrosion, cold and hot temperature resistant.

4. Specifications and Functions
The product comes in vertical and horizontal varieties in the range of 500-4,000ψdiameter and 0.5-150 tons.
Function: Distinguished for storing water and chemicals.

5. Product Photo

![Product Photo](image-url)
CHEMICALS TANK

1. Structure and Principles
   (1) Fabricated by machine winding. The tank is light-weight with smooth internal surface. It has stable quality and high strength.
   (2) The strengthened layer is fabricated with the best resin construction. It is durable, heat-resistant, and coldness-resistant - no distortion under high temperature and no cracking in low temperature.

<table>
<thead>
<tr>
<th>(a) Weight ratio</th>
<th>1.7~1.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) Tensile strength</td>
<td>8.0~18kg/mm</td>
</tr>
<tr>
<td>(c) Tensile elasticity rate</td>
<td>750~1500kg/mm</td>
</tr>
<tr>
<td>(d) Compression strength</td>
<td>12~22kg/mm</td>
</tr>
<tr>
<td>(e) Bend strength</td>
<td>20~30kg/mm</td>
</tr>
<tr>
<td>(f) Bend elasticity rate</td>
<td>650~1,500kg/mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(a) Normal temperature range</th>
<th>-50~+120 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) Heat ratio</td>
<td>0.29~0.32kcal/kg °C</td>
</tr>
<tr>
<td>(c) Heat conductivity</td>
<td>0.2~0.3kcal/kg°C</td>
</tr>
<tr>
<td>(d) Linear expansion coefficient</td>
<td>(15~30)*10 /°C</td>
</tr>
</tbody>
</table>

2. Purpose
   (1) General chemical industry: storage tank, reaction tank, transfer tank, waste-water tank.
   (2) Steel industry: soaking tank, washing tank.
   (3) Non-metal industry: electrolytic cell, electrolyte adjustment tank, washing tank, waste-liquid tank, paper pulp.
   (4) Fiber industry: bleaching tank, washing-liquid tank, material tank, neutralization tank, washing tank, cleaning tank, soaking tank.
   (5) Food, medical material industry: material storage tank, transfer tank, material-mixing tank, pure-water tank.

3. Specifications and Functions

FRP Horizontal-type Anti-corrosion Tank
OCTAGONAL PLASTIC SEWAGE WELL

1. Structure and Principle
   The well is made by special injection moulding. It is designed with multiple pipe connection for leakage prevention. It is light and easy to install.

2. Purpose
   Sewer system, telecommunication and power manhole, community sewer pipe connection, roof corner catchments.

3. Features
   (1) One-piece compounded moulding of plastic.
   (2) The well is one-piece moulded with pipe apertures and shields, which may be knocked off for connection as required. Installation is done by layer and secured with stainless steel bolts. It is fitted with leak prevention rubber for flow adjustment that enables smooth flow. Therefore, it more convenient to install than RC.
   (3) Manually transportable.
   (4) The lightweight design enables easy manual transport and installation and is not constrained by narrow passages, hence cuts down labor and time costs. Moreover, rubbers are fitted between the well and the waste water pipes to prevent leakage.

4. Specifications and Functions
   Inner diameter 600mm (height of assembly model may be adjusted).

<table>
<thead>
<tr>
<th>Cover Layer</th>
<th>Adjustable Layer</th>
<th>4” Base</th>
<th>Adjustable Layer</th>
<th>8” Base</th>
<th>Adjustable Layer</th>
<th>Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>150</td>
<td>300</td>
<td>80</td>
<td>20</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

5. Product Photo

相同企業有限公司  SIMILAR ENTERPRISE CO., LTD
台中市烏日區溪南路一段 506 巷 485 號
No. 485, Lane. 506, Sec. 1, His Nan Rd., Tong Yang Village, Wu Jih District, Taichung City, Taiwan
TEL : +886-4-2335-2827 FAX : +886-4-2335-2659 E-mail : same66@ms16.hinet.net http:// www.similar.com.tw
KITCHEN SEWAGE PIPING BOX

1. **Structure and Principle**
   Formed by plastics injection, able to connect to sewage pipeline in diverse direction; use leak-proof connector to keep from leakage; light in weight and easy in construction.

2. **Purpose**
   Sewage system, telecommunication and power cable maintenance conduit, connection of community home sewage and rainwater ditch.

3. **Features**
   Complex plastics are sued: great strength. Its resistance to pressure is tested up to reach 12 tons. The design has 4”ψ and 8”ψ bearings on all its sides so that the housing can vertically be connected to the water pipes on all of its sides and the connecting pipes do not need to bent or processed.

4. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Pavement layer</th>
<th>Pavement layer</th>
<th>Pavement layer</th>
<th>Ø100mm 6 hole, mid layer</th>
<th>Ø200mm 4 hole, mid layer</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>100</td>
<td>300</td>
<td>150</td>
<td>255</td>
</tr>
</tbody>
</table>

5. **Product Photo**
OZONE GENERATOR & HIGH-PERFORMANCE MIXING FACILITIES

1. Structure and Principle
   The primary function of ozone is for bacteria extermination, advanced oxidation, discoloration and preservation. The bacteria killing strength of ozone is 2000 times higher than that of chlorine. In general advanced oxidation, ozone is only second to F2, OH and O, ranking number four; the half-life cycle is approximately 22 minutes with benefits of no residue, no accumulation and can be produced at any given time. It is extensively applied in water treatment such as cooling tower, swimming pool, drinking water, industrial wastewater, domestic wastewater, semiconductor wafer washing and air cleaning.

2. Features
   Applied in various types of water and air treatment.

3. Purpose
   (1) Ozone generator
       A. Unique double quartz tube design

   a. High-voltage discharge. Ozone produced not only has high purity and stability, it does not yield any impurities and can be continuously used for long duration without having to clean the tubes.
   b. Module design. Modular numbers can be adjusted to needs for power saving, and require no operation halting for repair. It saves a lot of costs to buy another machine for standby.
   c. Self-owned patent right

   B. Complete ozone generator models
       a. Ozone production range from 2g/hr to over kilograms.
       b. The gas-fed can be from air or oxygen. Under the same gas flow rate; AirTree can produce more ozone than the other makers.
c. Provide the most complete system design and install the related accessories. To achieve the stable output and safe operation.

d. Acquire the international certificate CE and SEMI. The best quality is no doubt.

C. Simple operation design

a. Built-in communication interface: 4-20mA signal output can be connected to central control for remote controlling.

b. Touch-screen man/machine interface: easy to operate and configure; bilingual panel displays in Chinese and English.

(2) High-performance mixer

A. Negative pressure sucks in ozone, dissolving evenly in water to form 0.2mm micro bubbles that float in water to attain 90% dissolution rate.

B. Gas-liquid separator: Separate the undissolved ozone and water, and then recycle ozone for remixing to bolster efficiency; prevent end gas dispersion to save the costs for additional devices of ozone destructor.
SPIRAL TYPE UF MEMBRANE FOR ED PAINT

1. Structure and Principles

The material of these series of UF membrane is PVDF according to the MWCO range. It is more suitable for anodic and cathodic paint. The spacer is selected for more membrane area and low resistance, which is difficult to fouling for the pigment, oil and colloidal impurities. A standard product of spiral membrane element covers the FRP. PVC or PP plastic package are also acceptable per special order. The brine sea is set at the feed side, or move to the output position for the customer's requirements.

**Specification of membrane elements**

<table>
<thead>
<tr>
<th>Item</th>
<th>PVDF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membrane</td>
<td>Polyester</td>
</tr>
<tr>
<td>Membrane supporter</td>
<td>PVC</td>
</tr>
<tr>
<td>Permeate pipe</td>
<td>ABS plastic</td>
</tr>
<tr>
<td>Baffle</td>
<td>EPDM</td>
</tr>
<tr>
<td>Brine seal</td>
<td>PP net</td>
</tr>
</tbody>
</table>

2. Features

1. Anodic / cathodic ED paint.
2. Aqueous-based paint.
3. Waste water re-use.
4. Alkaline cleaning agent recovery.
5. PVA recovery.
6. Almost all paint can be recycled and pure water be saving by using this kind of UF membrane.

3. Product Photo

4. Specifications and Functions

**Size of membrane element:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Length(A) Inches(mm)</th>
<th>Permeate pipe ID/OD(B)</th>
<th>OD of element (C) Inches(mm)</th>
<th>Connector length (D) Inches(mm)</th>
<th>Membrane area ft²(m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4020F</td>
<td>20(508)</td>
<td>0.748(19)</td>
<td>3.91(99.4)</td>
<td>-</td>
<td>32(3.0)</td>
</tr>
<tr>
<td>4040F</td>
<td>40(1016)</td>
<td>0.748(19)</td>
<td>3.91(99.4)</td>
<td>-</td>
<td>75(7.0)</td>
</tr>
<tr>
<td>4040M</td>
<td>40(1016)</td>
<td>0.748(19),OD</td>
<td>3.91(99.4)</td>
<td>1.063(27)</td>
<td>73(6.8)</td>
</tr>
<tr>
<td>6040M</td>
<td>40(1016)</td>
<td>1.237(31.4),OD</td>
<td>5.75(146)</td>
<td>0.854(21.7)total</td>
<td>150(14.0)</td>
</tr>
<tr>
<td>8040F</td>
<td>40(1016)</td>
<td>1.142(29)</td>
<td>7.91(201)</td>
<td>-</td>
<td>285(26.5)</td>
</tr>
</tbody>
</table>
FRP PREFABRICATED WASTE-WATER TREATMENT EQUIPMENT

1. Structure and Principles

2. Features

   (1) It enables you to shorten construction time in large scale and save space. This product can be completely assembled in factory. Only simple assembly is needed after at the installation site. Compared to traditional RC tanks, it saves 1/3 to 1/4 construction time.

   (2) It is easy to assemble and operate. Machine equipments used in this unit are also automatic; no manual operation is needed. Only simple regular maintenance is needed to maintain the quality of water to the release standard.

   (3) The whole unit can be installed underground. The unit can be placed on a RC structure platform before piping and earth filling works are carried out. After installation is completed, only a man-hole needs to be left on the surface of the ground. Therefore, the land-surface above can be landscaped or used for other purposes like parking for maximum land utilization.

3. Product Photo

   FRP Combo Settling Separation Type Waste-Water Treatment Tank
CAST RC, FRP SEWAGE TREATMENT FACILITY & SEWAGE, WASTEWATER EQUIPMENT

1. Structure and Principle
   The product is a class 2 sewage treatment, employing aeration to purify water for building sewage to meet the legal release standards. The product is made of RC and FRP.

2. Purpose
   Building sewage treatment facility.

3. Features
   (1) Easy installation, time and labor saving.
   (2) Low breakdown rate.
   (3) Easy to clean.
   (4) This product is designed with auto cleaning function that enables regular in-house cleaning without professional service.
   (5) The product is designed with a manhole for monitoring.
   (6) The facility requires only regular drain-off in every 6~12 months as required by law to restore the treatment efficiency to over 90%.

4. Specifications and Functions
   Material: The product is made of RC and FRP.

<table>
<thead>
<tr>
<th>Structure</th>
<th>Spec Daily Capacity CMD (m³/day)</th>
<th>L (cm)</th>
<th>W (cm)</th>
<th>H (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC sewage/10-person load</td>
<td>2.5</td>
<td>299</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>RC sewage/20-person load</td>
<td>5.0</td>
<td>600</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>RC sewage/6-person load</td>
<td>1.5</td>
<td>162</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>RC sewage/10-person load</td>
<td>2.5</td>
<td>280</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>RC sewage/15-person load</td>
<td>3.75</td>
<td>445</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>RC sewage/20-person load</td>
<td>5.0</td>
<td>396</td>
<td>160</td>
<td>150</td>
</tr>
<tr>
<td>RC sewage/40-person load</td>
<td>10.0</td>
<td>840</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>RC sewage/60-person load</td>
<td>15.0</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC sewage/80-person load</td>
<td>20.0</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC sewage/120-person load</td>
<td>30.0</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC sewage/160-person load</td>
<td>40.0</td>
<td>250</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PRE-FABRICATED FRP SEWAGE TREATMENT PLANT

1. Structure and Principle
The vessels of FS serial products are made of Fiberglass-Reinforced Polyester (FRP), which include:
1. Primary Sedimentation Tank.
2. Contact Aeration Tank.
4. Disinfectant and Effluent Tank.

2. Purpose
Applied to all kinds of buildings for treatment of domestic water. Reducing pollutions of effluent water in compliance with the Water Pollution Control Act.

3. Features
1. Vessels, made of Fiberglass-Reinforced Polyester (FRP), this product is more stable, more convenient to use and safer compared to other wastewater treatment equipments.
2. Using the Contact Aeration Process to reduce water pollution speedily through the Bio-Film in the biofilter, which has higher specific surface area.
3. Reduce construction time and land area needed.
4. Corrosion-free - all component are prefabricated in the factory.
5. Reduce pollution to domestic water stably and efficiently.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Certification</th>
<th>Model</th>
<th>User</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yu-Chien No:0918</td>
<td>FS-AB10</td>
<td>10</td>
<td>2.5 CMD</td>
</tr>
<tr>
<td>Yu-Chien No:0919</td>
<td>FS-AB20</td>
<td>20</td>
<td>5 CMD</td>
</tr>
<tr>
<td>Yu-Chien No:0556</td>
<td>FS-AB30</td>
<td>30</td>
<td>7.5 CMD</td>
</tr>
<tr>
<td>Yu-Chien No:0200</td>
<td>FS-AB40</td>
<td>40</td>
<td>10 CMD</td>
</tr>
<tr>
<td>Yu-Chien No:0557</td>
<td>FS-AB50</td>
<td>50</td>
<td>12.5 CMD</td>
</tr>
<tr>
<td>Yu-Chien No:0201</td>
<td>FS-BB100</td>
<td>100</td>
<td>25 CMD</td>
</tr>
<tr>
<td>Yu-Chien No:0016</td>
<td>FS-B-B-30</td>
<td>120</td>
<td>30 CMD</td>
</tr>
<tr>
<td>Yu-Chien No:0202</td>
<td>FS-BB160</td>
<td>160</td>
<td>40 CMD</td>
</tr>
<tr>
<td>Yu-Chien No:0017</td>
<td>FS-B-B-50</td>
<td>200</td>
<td>50 CMD</td>
</tr>
</tbody>
</table>
Overview of Sludge Treatment and Recycling Equipment

New types of sludge and environmental requirements are resulted from the operational changes from different fields. In particular, the differential gap between the formation of industrial sludge and the chemical properties is enormous. Thus, dewatering equipment, being the end of the industrial chain, shall continuously have further innovations and creations as to be able to provide the corresponding technological services and productions at the right time.

I. Sludge Dewatering

Dried bed from thirty years ago became obsolete due to its labor costs and climatic factors. They were later replaced by belt pressed and decanter centrifugal dewatering machines, and currently plate filter press (pressurization and dehydration) as well as screw press are popular models. In a near future, membrane filter press which emphasizes on high-pressure and multi-functions will become the mainstream model. The reason for this trend is owing to the fact of the increasing demand of lower moisture content in sludge cakes. In regard to the analysis of the physical mechanism of sludge dewatering filtering, filtration pressure is the basic principle for the dehydration process in every kind of machinery; the higher the pressure, the higher the degree of dryness of the sludge cakes. Although the operations of the various types of the dewatering machines differ, yet the newly designed model adopts a higher filtration pressure for lower moisture content in the filtration cake.
## Overview Table of the Properties of the Common Dewatering Machines

<table>
<thead>
<tr>
<th>Dewatering Machine Model</th>
<th>Belt Press Filter</th>
<th>Decanter Centrifugal Filter</th>
<th>Plate Filter Press</th>
<th>Screw Press</th>
<th>Automatic Membrane Filter Press</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction principles</strong></td>
<td>By squeezing and driving the pressure rollers, the sludge dewatering process is operated in a single or double filter cloth.</td>
<td>The sludge would withstand the centrifugal forces within the machine. The particles would drop in the circumferential wall of the cone carcass as to achieve solid-liquid separation.</td>
<td>Multiple plates and filter frames or concave plates would be covered with filter cloth. The sludge would be pumped into the filter chamber to be filtered and dewatered through filter cake and filter cloth.</td>
<td>The transportation and squeezing are done with different propel shafts between the gaps, so that the filtrate and filter cake are separated through the peripheral sieves.</td>
<td>A concave filter is covered with filter cloth and equipped with multiple membranes. The sludge is pumped into the filter chamber with high pressure, filtered by the filter cake and filter membranes for two squeezing effects and dewatering.</td>
</tr>
<tr>
<td><strong>Filtration Rate</strong></td>
<td>100-200 kgDS/m-h</td>
<td>15m³/h-m (Bowl)</td>
<td>2-6 kgDS/m²-h</td>
<td>&lt; 1.5 rpm</td>
<td>3-12kg/m²-h</td>
</tr>
<tr>
<td><strong>Filtration Pressure</strong></td>
<td>1-5kg/cm²</td>
<td>1000-3000G</td>
<td>Filtration: 1-7kg/cm²</td>
<td>--</td>
<td>Filtration: 1-15kg/cm² Squeezing: 5-15kg/cm²</td>
</tr>
<tr>
<td><strong>Moisture Content in the Filter Cake (%)</strong></td>
<td>80-85</td>
<td>70-85</td>
<td>50-75</td>
<td>60-85</td>
<td>35-70</td>
</tr>
</tbody>
</table>
II. Sludge Conditioning

Most of the properties of the sludge can be divided into organic sludge and inorganic sludge. For the past few years, the cost of sludge disposal has been augmenting. Sludge dewatering is just the first step, while a proper sludge conditioning is fundamental as to make it easier to remove the moisture. The main purpose of sludge conditioning is to increase reduce the resistivity factor; the lower the number, the easier to dewater. The following is the type of sludge in numerical order (from larger to smaller): activated sludge > sewage sludge > conditioned activated sludge > conditioned sewage sludge > gelatinous Al(OH)3 > gelatinous Fe(OH)3 > CaCO3.

Different model of dewatering machines need different type of chemical conditioner. Belt press filter, decanter centrifugal filter and screw press filter require polyacrylamide flocculants, whereas filter press requires ferrous chloride or slacked lime if necessary. Yet the evaluation of the incremental proportion of the amount of dry sludge; if polyacrylamide flocculants is used, then the problem of “appropriate amount” shall be noticed as the excessive or insufficiency would reduce sludge dewatering. As for organic sludge of higher resistivity factor, cell wall breaking technique would be adopted for a deep conditioning with high-pressure dewatering, so that sludge cake can effectively reduce the moisture content and can be used in green building materials or alternative fuels, which would be a meaningful practice for energy-saving and carbon-reduction.
III. Sludge Drying

Apart from conditioning and dewatering, industrial sludge can apply drying method to reduce weight, or to assess in accordance with different conditions of the cases for its demand. If the equipment life is between 7 to 10 years, the energy efficiency could be the key parameter of selection. Not only the initial set-up cost shall be considered, the price variation of the energy shall also be taken into the consideration.

**Reference table of energy-consumption for moisture content removal of the common dewatering machines**

<table>
<thead>
<tr>
<th>Drying Equipment Model</th>
<th>Medium</th>
<th>Energy</th>
<th>Commercial Moisture Content</th>
<th>Energy Consumption / kg Dewatering amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot air drum dryer</td>
<td>Hot air</td>
<td>Waste gas</td>
<td>15-25%</td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td>Hot air</td>
<td>Boiler oil</td>
<td>15-25%</td>
<td>0.1-0.13L</td>
</tr>
<tr>
<td></td>
<td>Hot air</td>
<td>Electricity</td>
<td>20-30%</td>
<td>1.0-1.1kw-hr</td>
</tr>
<tr>
<td>Dehumidifier drum dryer</td>
<td>Refrigerant</td>
<td>Electricity</td>
<td>25-40%</td>
<td>0.45-0.65kw-hr</td>
</tr>
<tr>
<td>Dehumidifier drying fixed box</td>
<td>Refrigerant</td>
<td>Electricity</td>
<td>30-45%</td>
<td>0.5-0.7kw-hr</td>
</tr>
<tr>
<td>Dehumidifier Dryer</td>
<td>Refrigerant</td>
<td>Electricity</td>
<td>30-40%</td>
<td>0.55-0.7kw-hr</td>
</tr>
<tr>
<td>Spiral blade dryer</td>
<td>Steam or hot kerosene</td>
<td>Boiler oil</td>
<td>15-30%</td>
<td>0.1-0.14L</td>
</tr>
<tr>
<td>Electric oven</td>
<td>Hot air</td>
<td>Electricity</td>
<td>15-30%</td>
<td>1.1-1.5kw-hr</td>
</tr>
<tr>
<td>Vacuum drying filter press</td>
<td>Steam</td>
<td>Boiler oil</td>
<td>25-40%</td>
<td>0.1-0.14L</td>
</tr>
<tr>
<td></td>
<td>Steam</td>
<td>Natural gas</td>
<td>25-40%</td>
<td>0.07-0.08m³</td>
</tr>
<tr>
<td></td>
<td>Hot air</td>
<td>Waste hot water</td>
<td>25-40%</td>
<td>30-35kg×95°C</td>
</tr>
</tbody>
</table>
IV. Differences between Domestic and International Products

Sludge dewatering and drying equipment belongs to standard mechanical manufacturing. International renowned manufacturers which have developed several distinctive machine models cannot provide simple, clear and complete specification lists, and thus only professionals of the manufacturers are capable to select the adequate model. For a further understanding, most people have to solicit an agent to offer the adequate machinery according to their conditions. There are some common problems of the imported products: 1. Some type of industrial sludge is not common in the dewatering machine’s country of origin (such as sludge from dyeing, leather processing, optoelectronics and other technology electronics industries). 2. The coagulants included in the process of wastewater treatment in Taiwan are generally PAC, ferrous chloride, calcium chloride, etc. In some other countries, as of the manufacturers’ countries of origin are still using lime series. Different components and formation conditions might have a wide variation in their processing features. Without a proper data or sufficient capability, probability of further problem might greatly increase.

On the contrary, lands in Taiwan are expensive and the regulations are strict. Within a limited market size and client-factory space, dewatering machine and dryer manufacturers are constantly making progress. Adopting top-quality electromechanical components made in Taiwan can provide the clients with excellent and customized solutions for every industry. Most of the manufacturers in Taiwan are capable of making oversea exportations as their overall technology and quality are not inferior to those of the international brands.
BELT PRESSES (CONDITIONING + GRAVITY BELT THICKENING + DOUBLE-BELT DEWATERING  (TRIPLE-BELT TYPE))

1. Structure and Principle
   The suitable Polymer Solution and the concentrated Slurry dosed or pumped from the Polymer Solution Storage Tank and the Slurry Storage Tank into the Mixing Tank and Belt Thickener to form the thickened Sludge, then fall down the Gravity-dehydrating zone evenly / Roller Prepressure - dehydrating zone / Roller Highpressure - dehydrating zone / Roller Highpressure & shearing - dehydrating zone, then to form the Sludge Cake and come out by the Scrapper.

2. Purpose
   (1) For the Sludge Dewatering Of the various industrial, Butchery, livestock, city sewer, Excretion, water purifying.
   (2) Solid and liquid separation under processing for the food & beverage, chemical industry, Mine…etc. Factories.

3. Features
   (1) With Filter-Belt Tracking Device for controlling the Filter-Belt Running within the deviating scope.
   (2) With the Upper/Lower Filter Belts cylinder type tensioning device and get the Lower water content’s rate of the Sludge Cake under the Air tensioning adjustment required.
   (3) With strong structure / easy maintenance and Lower Horse Power Consumption / Lower Noise.

4. Specification and Functions
   (1) The Belt Type Thickener and Filter Belt. Type Press of the Belt Press had the Polymer Solution and Slurry feeding, mixing, reaction with the stable flow. Condition from the Polymer Solution and Slurry inlet to the Sludge Cake outlet.
   (2) The Sludge-Flocs inlet to the Thickener area, it will increase the speed for removing the free water by gravity crawled and plow device, then raise the slurry concentrate and get the Thickened Sludge-Flocs.
   (3) After the Gravity-dehydrating zone evenly, have the Solid Content’s Rate of the Sludge about 8~10%. The Sludge via the Roller Prepressure-dehydrating zone / Roller Highpressure-dehydrating zone / Roller Highpressure & shearing-dehydrating zone, then to form the Sludge Cake. The Solid Content’s Rate of the Sludge Cake can reach about 15~35%(Depends on the Slurry feature

5. Product Photo
BELT PRESSES

1. Structure and Principle

The suitable Polymer Solution and the concentrated Slurry dosed or pumped from the Polymer Solution Storage Tank and the Slurry Storage Tank into the Mixing Tank and Drum Thickener to form the thickened Sludge, then fall down the Gravity-dehydrating zone evenly / Roller Prepressure-dehydrating zone / Roller Highpressure-dehydrating zone / Roller High-pressure & shearing- dehydrating zone, then to form the Sludge Cake and come out by the Scraper.

2. Purpose

(1) For the Sludge Dewatering Of the various industrial, Butchery, livestock, city sewer, Excretion, water purifying.
(2) Solid and liquid separation under processing for the food & beverage, chemical industry, Mine…etc. Factories.

3. Features

(1) With Thickening and Dewatering function for the various Slurry Dewatering Treatment.
(2) With Automatic Control Operating and continuous production for the various Slurry Dewatering Treatment.
(3) With continuous treating and high working efficiency.
(4) With Filter-Belt Tracking Device for controlling the Filter-Belt Running within the deviating scope
(5) With the Upper / Lower Filter Belts cylinder type tensioning device and get the Lower water content’s rate of the Sludge Cake under the Air tensioning adjustment required.
(6) With strong structure / easy maintenance and Lower Horse Power Consumption / Lower Noise.

4. Specification and Functions

(1) The Rotary Drum Thickener and Filter Belt Type Press of the Belt Press had the Polymer Solution and Slurry feeding, mixing, reaction with the stable flow Condition from the Polymer Solution and Slurry inlet to the Sludge Cake outlet.
After the Gravity-dehydrating zone evenly, have the Solid Content’s Rate of the Sludge about 8~10%. The Sludge via the Roller Prepressure-dehydrating zone / Roller Highpressure-dehydrating zone / Roller Highpressure & shearing-dehydrating zone, then to form the Sludge Cake. The Solid Content’s Rate of the Sludge Cake can reach about 15.5 ~ 37% (Depends on the Slurry feature).

5. Product Photo

![Product Photo]

元錫工業股份有限公司 YUAN CHANG TSAY INDUSTRY CO., LTD.
台中市梧棲區向上路九段382巷106號
No. 106, Lane 382, Sec. 9, Xiangshang Rd., Wu-Chi District, Taichung City, Taiwan
TEL : +886-4-2630-5899  FAX : +886-4-2630-8299  E-mail : yciel@yciel.com http : // http://www.yciel.com
ROTARY DRUM TYPE/BELT FILTER TYPE
SLURRY THICKENER

1. Structure and Principle
   It is designed by centrifugal and gravity thickening method to thicken the slurry (0.6~2.0% D.S.) into sludge (3~8% D.S.) for the general waste water treating system.

2. Purpose
   (1) For the various industrial waste slurry pre-thickening treatment.
   (2) For the solid and liquid separation of the Industrial processing treatment of the paper & pulp, fiber, chemical, food, plastic, metallurgy, mining... etc. industries.
   (3) For the raw materials’ process filtering-recovering of the brewing, flavoring, stuffing, starch factory and the various food-processing factory.
   (4) The filtering before tap-water intaking, the filtering-recovering of the rainwater.
   (5) The solid and liquid separation of the fruit processing industry, vegetable processing industry.
   (6) The engineering drainage and large-size waste water treatment of the city mixed raw sewage, paper & pulp industry sewage, fiber industry sewage, chemical industry sewage... etc.
   (7) The filtering-removing of the dross pellet of the winery industry, pickled industry.

3. Features
   (1) It is designed to treat the various slurry and controlled by Motor (Speed variable) continuously.
   (2) With simple structure, low maintenance and running costs, and easy maintenance.

4. Specification and Functions
   (1) It is designed to remove the free water to get the thickened sludge continuously for the various slurry.
   (2) The thickener is designed by the slurry inlet, mixed with the recovering suitable polymer solution to get the thickened sludge.
   (3) The thickened sludge will be reached 3.5~12% D.S. from the slurry (0.2~2.0% D.S.)

5. Product Photo

元錫工業股份有限公司  YUAN CHANG TSAY INDUSTRY CO., LTD.
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TEL : +886-4-2630-5899  FAX : +886-4-2630-8299  E-mail : ycicl@ycicl.com  http : //www.ycicl.com
SLUDGE DEHYDRATING MACHINE

1. Structure and Principle

(1) Sludge handling tank: use polymer coagulant to treat sludge conveyed from sludge concentration tank; facilitate the preliminary liquid separation and later dehydrating process.

(2) Rotary screen: apply porous screen and roller to rotate by low speed, not to destroy the polymer character and screen out free water from sludge organization.

(3) Gravity dehydrating zone: during the sludge conveying process by filtering cloth, certain water will penetrate out; the water-scratch knife equipped to this machine will increase the gravity dehydrating efficiency.

(4) Low shear force zone: special roller structure and line-up way can feed massive sludge into the shear-force dehydrating zone and express bigger sludge treating capability.

(5) High shear force zone: special roller structure and line-up way can lower cake’s water concentration rate.

(6) Low cake water concentration rate, subsequent treatment cost is reduced.

(7) Can be designed in two-stage compression to reduce cake’s water concentration rate more.

2. Purpose

(1) Applied in wastewater/sewage treatment plant, sludge dehydrating treatment to save cleanup cost.

(2) Applied in industrial production process that needs squeezing, dehydrating or dry procedure.

(3) Applied to food-making process that needs squeezing or dehydrating procedure.

3. Feature

(1) Small installation/operation space, simple in operation and easy to maintain.

(2) No chemical coagulant adding required; operation cost is low.

(3) No complicate peripheral equipment required; operation abnormality can be minimized.

(4) No massive filtering cloth washing water required and can eliminate second treating load from it.

(5) Professional selection to filtering plate and cloth, elevating the dehydrating efficiency.

4. Product photo

![Product Photo](image-url)
SLUDGE DEWATERING MACHINE

1. Structure and Principle

(1) Filter belts are retained in position by a strut system control and do not slide off at high rpm.

(2) Filter belts are products imported from Europe and the US that have extended durability and are easy to replace when damaged.

(3) This system utilizes powerful nozzle components imported from Europe and the US. The nozzle has high washing efficiency to keep the filter belts clean and prevent clogging.

(4) The pressure rollers are constructed of stainless steel (SUS304).

(5) This system is designed with UPE bearings, which do not require lubrication maintenance.

(6) The steel parts of this machine underwent high-precision sandblasting treatment and are finished with epoxy paint to ensure corrosion-resistance.

2. Features

(1) Suitable for dewatering sludge used for waste water treatment of all industries.

(2) High dewatering capabilities; low sludge content in water.

(3) Water/solid separation for manufacture plants.

(4) Filter belt cleaning requires minimum volume of water.

(5) High filter belt dewatering performance, low solidifier volume.

(6) Fully automatic; continuous operation; maximum manpower savings; just press the power switch to operate.

(7) Only needs regular oil changes for the speed reduction machine.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>Processing Capability kg/D.S/hr</th>
<th>Sludge Water Content %</th>
<th>Machine Dimensions LxWxH (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>700s</td>
<td>10 ~ 20</td>
<td>80 ~ 85</td>
<td>1.7×1.05×1.6</td>
</tr>
<tr>
<td>700</td>
<td>35 ~ 60</td>
<td>80 ~ 85</td>
<td>3.1×1.10×2.0</td>
</tr>
<tr>
<td>1000</td>
<td>45 ~ 110</td>
<td>80 ~ 85</td>
<td>3.1×1.30×2.0</td>
</tr>
<tr>
<td>1500</td>
<td>85 ~ 185</td>
<td>80 ~ 85</td>
<td>3.1×1.80×2.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Processing Capability kg/D.S/hr</th>
<th>Sludge Water Content %</th>
<th>Machine Dimensions LxWxH (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ~ 700</td>
<td>100 ~ 185</td>
<td>75 ~ 85</td>
<td>3.0×1.1×1.9</td>
</tr>
<tr>
<td>2 ~ 1000</td>
<td>210 ~ 330</td>
<td>75 ~ 85</td>
<td>3.0×1.3×1.9</td>
</tr>
<tr>
<td>1500</td>
<td>300 ~ 500</td>
<td>75 ~ 85</td>
<td>3.0×1.8×1.9</td>
</tr>
</tbody>
</table>
FILTER-ROLLER SLUDGE DEHYDRATOR

1. Purpose
Applicable for wastewater sludge dehydration and manufacturing process.

<table>
<thead>
<tr>
<th>Initial Dehydration</th>
<th>Dehydration</th>
<th>Final Dehydration</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large wheel diameter and low-pressure cogwheel designed to drain out most liquid from sludge to reduce the moisture content in the sludge.</td>
<td>Smaller wheel diameter enables higher shear-force to further press out liquid from the sludge, and provide high-pressure basic shear-force.</td>
<td>Dual high-pressure wheels compress out the toughest cell liquid from sludge.</td>
<td>The fully dehydrated remains is discharged at the outlet, stored in container for removal by certified vendor.</td>
</tr>
</tbody>
</table>

2. Features
(1) Fully automated operating functions.
(2) Fully zinc-plated to prevent rusting with a rigid base.
(3) Extended gravity dehydration design.
(4) Pneumatic filter tension auto control system.
(5) Pneumatic dynamic snaking calibration system.
(6) Direct-driven filter mechanism.
(7) Liquid crystal electronic constant-speed operating functions.
(8) Complete irregularity alarm and auto stop function.
(9) High-efficiency low-pressure cogwheel design.
(10) Made with plated stainless steel and bolts.
(11) Solid wheel axles.
(12) All wheel axles are chrome-hardened and center calibrated.
(13) Swiss Pretext filter set.
(14) Plat-filter tension mechanism.
(15) Auto filter washer.
(16) Vacuum suction accelerator can be installed.
(17) Pressured cleaner may be installed for water saving.

3. Product Photo

![Product Photo]

銓風機械股份有限公司  CHUAN FENG MACHINEY CO., LTD
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— 125 —
CHAMBER PLATE TYPE/MEMBRANE PLATE TYPE 2ND SQUEEZING FILTER PRESSES

1. Structure and Principle

Our Filter Presses are designed for the slurry feeding into the Filter Plate’s chamber room and making use of the close type positive pressure through filter-cloth to discharge the filtrate out of the discharged holes to reduce the water content rate of the slurry and get the lower water content rate of the sludge cake.

2. Purpose

(2) Stone Material / Construction / River / Reservoir Mud’s Dehydrating Treatment.

3. Features

(1) Main body frame including front, middle, and rear plates and cross beams are integrally processed by CNC milling machine, ensure that the rack vertical angle of the main body and surface precision flat.
(2) Cross beams used S50C high carbon steel solid material, tightly together with arranged front and rear plates by match slots. After the H-shape structure pinned into the slant pins and bolted firmly, to impose high tensile welding material to weld tightly, to secure welding never be teared off, ensure that the machine has long service life.
(3) Chamber plates are integrally molded by P.P. engineering plastics, light weight, chemical resistance, high filtration speed, good sealing, durable without deformation, long service life.
(4) Membrane type two time filter press plates, enhance reducing the cake moisture and shorten processing time, high economic efficiency.
(5) Filter cloth mainly used P.P. material, good permeability, strong peelability of sludge cake, a variety of materials and densities to match a variety of sludge properties.

The details of the Various Models’ Functions and Peripheral Equipments:

①. Open plate devices for all models.
②. Vibration(shaking) auxiliary discharging system.
③. Low pressure in tube reverse discharging device.
④. Vertical & swing arm type automatic high pressure facade cleaning system.
⑤. Filter core blowback functions.
4. **Specification and Functions**

(1) Adopted Oil hydraulic system operating, pressure, centralized way with high efficiency.

(2) Made use of high pressure to press the slurry to reduce the water content rate of the slurry into the sludge, meanwhile, saving the dried cost and time.

(3) With good water dehydrating result (65%~75%), low power consumption, reducing post-treating cost, meanwhile, no chemical agent adding in general.

(4) With shortening filtration time, higher filtering efficiency and treating capacity.

(5) Suitable for the various slurry dewatering applications, the inlet consistency of the slurry can be reached to 5%.

(6) Adopted the P.P. Filter-Cloth with heat setting, rolling, good water permeability, strong cake-peeling property, easy washing property.

(7) The Sludge cake will be peeled from filter-cloth easily, the lower operating manpower (depends on the slurry feature).

(8) Filtering and Pressing time will be 0.5~12 hours (depends on the slurry feature).

5. **Product Photo**

![Product Photo]

元錫工業股份有限公司  YUAN CHANG TSAY INDUSTRY CO., LTD.
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AUTO-CLEANING MEMBRANE FILTER PRESS

1. Structure and Principle
Using chamber filter plate with a membrane adhering to the recess, a filter cloth is draped over each filter plate. All filter plates line up orderly with regular intervals. Between two filter plates, a hollow chamber is formed with feed tunnels channeling through the filter plates and chambers. Once the hydraulic cylinder is triggered to close the filter plates, the concentrated sludge is fed into the chambers via the diaphragm pump; the filtrate is then drained to accumulate sludge solids in the chambers. Hence, the more sludge is fed, the lower the water content of the sludge cake is. When the chambers are filled where sludge can no longer enter, stop the pump and close the feed valve and then execute the membrane second squeezing procedure. The expandable membrane uses its reverse force to further reduce the moisture content of the dewatered sludge cake until the set time lapses. The hydraulic device restarts and opens filter plates one by one or all at once via the high-stability hydraulic driving shifter to allow sludge cakes fall automatically into the running conveyor and transports the cakes to the storage silo or catcher bags for storage.

2. Purpose
(1) Wastewater sludge dehydration for various industries.
(2) Chemical manufacturing process’s solid and liquid separation.
(3) Water purification plant’s sludge dehydration.
(4) Construction industry’s waste sludge dehydration.

3. Features
(1) The fabrications are frame structure consisted of a head end, fixed end, traveling end, and sidebars. They are designed as rigid steel with rib reinforced construction. The sidebars are wedged into pockets in the ends of the press frame and fastened by high-tension bolts. The stress loads are calculated to ensure maximum absorption of all mechanical forces. It is adequate for high-pressure operation and sludge pulsation feeding.

(2) Rubber plates: 10~12mm steel sheets are used for interior reinforcement, which are molded with rubber throughout. The reinforced multi-support design assures optimal strength and durability.
(3) Hydraulic shifter: The pressure is empowered to drive tilted plates straight before shifting, superior to electrical or pneumatic models for free of error current detection and lack of drive that may lead the plates to fall-off.

(4) Auto cloths cleaner booth-type unit, dual transmission support plus cogwheel configuration for better stability; individual plate is aligned centrally to both sides for thorough cleaning by 20Bar jet to deter splashing; electric cables and water pipe come with mobile trays for aesthetic and easy maintenance.

(5) Sludge cake water content: generally reduce 20~70% of water content; film model is equipped with second film compressing system that further reduces 5~10% water content.

(6) Core-blow design: before the plate shifts back, the sludge inside the feed tunnel is blown back for clearance with water or high pressure air to prevent subsequent feed from crushing the plate and slurry from dripping onto the cakes when cakes are being discharging.

4. Specifications and Functions
   (1) Number of plates: 30~110pcs.
   (2) Plates materials: Rubber or Polypropylene
   (3) Plates sizes: 1,000, 1,250, 1,300, 1,500, 2,000mm.
   (4) Filtration area: 42~700m².
   (5) Chamber volume: 640~10,500L/cycle.

5. Product Photo

6. Award (Certified) Items
   Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999
MEMBRANE FILTER PRESS

1. Structure and Principle
   Theory: Filter presses are manufactured to separate solids from slurries. This machine comprises of several main components including the structured frame, plate pack, filter cloths and various modular components designing for the purpose of automation. During the process of filtration, the filter cloth plus the increasing accumulated thickness of the filter cakes will generate resistance against the flow. More and more hydraulic forces required to overcome this resistance. Once a compact filter cake be formed inside the filter press, it will be discharged out of the machine. Slurry flow will encounter and suffering following three types of resistances, and the total pressure drops ($-\Delta P$) equals to the sum of them.

   (1) Tubing friction resistance---- It is minor and irrelative small and it can be ignored compared to the other two types of resistance.
   (2) Filter cloth resistance----- The initial value of resistance of the brand new cloth was totally different from the used filter cloth! , the filter cloth resistance will be gradually increasing and this resistance will be reached a steady value after certain period of operational times. But, still, this resistance forces was much more less than the filter cakes’ resistance.
   (3) Filter cakes’ resistance---- This is the major forces which no one can ignore it! The resistance caused by filter cakes will be subjected to change caused by machine’s filter run! Resistance is starting from zero, then, it will be graduated increasing to(by) a steady value after certain times of filter run.

2. Purpose
   (3) Wastewater sludge dehydration for various industries.
   (4) Chemical manufacturing process’s solid and liquid separation.
   (5) Water purification plants’ sludge dehydration.
   (6) Construction industry’s waste sludge dehydration.

3. Features
   (3) Body structure: Head end, fixed end, traveling end and side bar are made by solid steel plate and jointed by high-strength bolts under precise safe strength calculation, able to withstand high pressure operation and suitable to the pulsed input loading.
   (4) Hydraulic driving mechanism: Double acting electricity-driven hydraulic cylinder; move forward/backward and supplement pressure automatically.
Rubber filter plate: apply 10 or 12mm steel plate to build the reinforced core plate and totaled enclosed by rubber; the reinforced “Stay bosses” design can ensure longest operation lifetime; high sealing capability that won’t leak; anti-chemicals, elevated temperature and acid/caustic; no cracking or deformed.

Polypropylene filter plate: integrated into one piece by high tempura & pressure + milling machining; able to create visible and invisible streams; the reinforced “Stay bosses” design can prevent from bad sealing or deformation from insufficient mechanical strength.

Membrane protection: automatically detect the residual air pressure in membrane, avoiding instant explosion or trip made while rejecting plate and thus would hurt operator.

Filter cloth: double-side, made by PP or PA (nylon); easy to separate cake rather than sticking on the cloth.

Control system: feed in from inner/outer door (incl. glass door) + dustproof & waterproof electrical control cabinet; allowing to set auto (constant cycle)/manual operation mode; prints + hot coats, bright, good looking and dirt endured.

Hydraulic plate-picking machine: pressure is sufficient to push skewed plate back to order and pick it up substantially; the process is better than motor-driven or pneumatic one that would drop down filter plate from error current induction or insufficient thrust force.

**Specifications and Functions**

1. Number of plates: 21~111pcs.
2. Plates materials: Rubber or Polypropylene.
3. Plates sizes: 800, 930, 1,000, 1,250, 1,300, 1,500mm.
4. Filtration area: 19~435m².
5. Chamber volume: 285~6,460L/cycle.

**Product Photo**

**Award (Certified) Items**

Industrial Development Bureau of MOEA certified the product for environmental protection quality standard in 2003.
MOVING CLOTHES TYPE FILTER PRESS

1. Structure and Principle
   A Moving clothes type filter press is a breakthrough of general filter press. It is a highly efficient, compact, dewatering device for separating solids from liquid slurries in the form of compressed cake. Its major components are a structured framework, filter chambers (formed by recess portion of Recessed plate system, or frames in plate and frame system), and filter cloth.
   Filter press technology although very basic in nature, but its application is as important to the various processes it serves, as is a simple wheel to the motive machines. Filter Press are separation devices used for solid or liquid separation that work on feed pressure or squeeze pressure to reduce liquid content in process or waste slurries or to reduce solid content in a product.

2. Features
   (1) Filter plates close
   The pressure-filtered dryer initiates, and the hydraulic system then drives the hydraulic cylinders to close the filter plates. Airtight chambers are thus formed.

   (2) Feed sludge
   The way to take in the sludge is to have the entry of sludge at the top of the chambers. The filtered liquid will be drained out through the filter clothes to achieve the goal of sludge dewatering.

   (3) Press to dewater
   After the sludge is filtered, high-pressure water is used to expand the membrane for further squeezing the sludge cake. The moisture of the sludge cake will be lowered again.

   (4) Filter plates open
   Following the return of the hydraulic cylinders, the filter plates are opened. Since the filter plates are connected by chains, all plates will be opened at the same time.

   (5) Release of sludge cake
   Using the filter-clothes moving apparatus, all mud cakes can be released at the same time and the process will be finished within one minute.

   (6) Filter clothes cleansing
   Every set of filter clothes is equipped with a cleansing nozzle. By utilizing the design of moving filter-clothes can finish cleansing at the same time.

3. Product Photo

水麗科技股份有限公司
WATER POWER TECHNOLOGY CO., LTD.
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Email:water.power66@msa.hinet.net http://www.waterpower.com.tw
FILTER PRESS

1. Structure and Principle
   Sludge is pushed into filter centre via a high-pressure pump to filter and compress. The pump then pumps into high-pressure air to bulge the rubber film for further compressing, squeezing out about 50-70% water content at this stage (pending upon sludge property). Before sludge cakes are discharged, high-pressure air is pumped into the feed opening to blow residues through the filter to achieve dehydration. The system is capable of 24-hour automatic operation.

2. Purpose
   Sludge drying for semiconductor, electroplating, dye manufacturing or other chemical sludge drying; sludge treatment for water purification plant, reservoir silt treatment, building sludge, tunnel engineering debris, manufacturing raw material hydrating and drying, food industry and steel mills, metal surface treatment industry, electronics, PCB, active sludge and bio-sludge, etc.

3. Features
   (1) Fully Automatic: PLC + Touch Screen Interface.
   (2) Dewatering effect: Water Content: 30% ~ 60%.
   (3) Easy to operate: Auto Back washing system + Auto Cake dropping system.
   (4) R & D + Manufacturing 100% in Taiwan.
   (5) High Efficiency: slurry feeding 10 bar, membrane squeezing 15 bar.

4. Product Photo
SCREW PRESS

1. Structure and Principle
Making use of the flight of screw rods conveying and squeezing principle, by pressing gradually, screwed the filtrate of the material through the metal screen net to separate the cake and filtrate to reach the dehydrating purpose.

2. Purpose
(1) Food industry wine dregs, coffee grounds, vegetables, food residue, aquatic processing extrusion dehydration.
(2) Dehydration of dregs, fibrous, granular and other related substances for food industry, agricultural processing, fish processing, chemical, paper pulp, textile fibers, and slaughtering industry.
(3) Extrusion processing broken or crushed uncooked or cooked material.
(4) Tomatoes, apples, pears, grapes, oranges, pineapples and other fruits squeezed into juice.
(5) Agricultural fibrous/particulate matter and other related dehydration.
(6) Soy sauce and wine after fermentation extrusion manufacturing.
(7) Palm oil, coconut oil extrusion manufacturing.
(8) Squeeze manufacturing of all kinds of edible vegetable oils.

3. Features
(1) With simple and solid structure, low driving speed, less consumables, using different operation speed by the different slurry properties, and low maintenance costs.
(2) With intermittent or continuous operation, steady output, high efficient function.
(3) With coaxial deceleration operation, direct connection type driving design, high torque, low noise, less vibration, low water consumption and less operating costs.

4. pecification and Functions
(1) Adopted Archimedes screw principle and screw arrangement design for various slurry and material dehydrating treatment to get the better treating capacity, low water content’s rate of the residue cake and stable result.
(2) Adopted stainless steel(SUS304) wedge wire screen and drilled metal mesh with high structure strength, wear resisting, durable, corrosion resisting, long using life span, good filtration and enough filter opening to avoid to be clogged by the impurity.
(3) With patent outlet design, the internal fixed pressure would not have synchronous rotation problem.

5. Product Photo
MULTI-RING SCREW PRESS
SLUDGE DEHYDRATING EQUIPMENT

1. Structure and Principle
   Flocculation tank, moving rings, fixed rings, screw, driving component.

2. Purpose
   (1) Industrial waste, municipal sewage sludge dewatering.
   (2) Food and beverage industry sludge dewatering.
   (3) Medical and health institutions sludge dewatering.
   (4) Petroleum, chemical industry sludge dewatering.
   (5) Animal husbandry, aquaculture industry sludge dewatering.
   (6) Machinery manufacturing, metal processing sludge dewatering.
       Dyeing, washing, paper making sludge dewatering.

3. Features
   (1) Strong ability of anti-oily sludge, best oil sludge dewatering machine.
   (2) Low energy consumption, less wash water.
   (3) Clean environmental, no pollution, and easy routine maintenance.

4. Specification and Functions
   (1) Lean structure, save space.
   (2) Unique design, never clogged filter holes.

5. Product Photo
DESANDER / SAND-WATER SEPARATOR

1. Structure and Principle
   Desander is based on the principle of centrifugal force, the water from the inlet into the device. It is resulting in a strong rotation motion under pressure effect. The centrifugal force, the role of the buoyancy, and fluid drag force can generate a different loading. Due to the different density of sand and water, the low density of water rising out of the exhaust outlet, high density sand is discharged from the bottom outlet, so as to achieve the purpose of grit removal. The product is mainly composed of driving device, stirring mechanism, absorbing part of the sand system, and electric control components.

2. Purpose
   Desanders are widely used for grit chamber treatment, water supply engineering, food, medicine and other industrial processes. It is used in grit chamber for the integrated sewage treatment plant of industrial zone. Grit removal is used in water purification plants by using river, lake water, and well. The sand-water separators are used for coal washing water, mineral processing and other industries.

3. Features
   The high sand removal efficiency is reached under the centrifugal and gravity by using tangential feeding water. They are small size, high surface loading, and large treating capacity, grit process not affected from hydraulic impact.

4. Specification and Functions
   Sewage treatment plant with a grit chamber, sediment separation effect is good. The closed or open grit desander is used for special high-performance separator with high sand content.

5. Product Photo
SLUDGE PLASTIC DRYING BED

1. Structure and Principle
   (1) The facility includes
       A. Drying bed are assembled with Filters,
       B. RC base with drainage,
       C. Sludge conditioning equipment and pipings.
   (2) Design and construction depend on the volume of sludge and space of field. A special design for equipment of pour and transport cake if necessary.
   (3) Sludge → Conditioning → Dumping into the drying bed → Naturally drying 7-30 days (depend on water content of cake we need) → Cake disposal.

2. Purpose
   Sludge drying for water and wastewater treatment plants, especially suitable for small and medium volume of sludge.

3. Features
   (1) Simple structure, invincible material, easy to construct, operate and maintain.
   (2) It might use no land by constructing the drying bed above the basin with RC.
   (3) Low investment cost, less 20-50% than mechanical drying machines.
   (4) High solid content of cake that might save cost of waste disposal.
   (5) Totally avoid of defects which sand drying bed would form obstruction and sandy-cake.

4. Representative Attainments
   (1) The dimension of a filter unit is 304.8mm×304.8mm×50.8mm.
   (2) Each filter has several tenons that make it easy to assemble. HDPE reinforced material with treating by UV on surface for anti-aging.
   (3) Hardness is above 63 (D Scale · Shore Durometer) and its compressive strength is over 4500kgf.

5. Product Photo
   ![Product Photo](image_url)
DRYING TREATMENT SYSTEM (Low Temperature Dehumidification Type)

1. Structure and Principle
   Dryer is constructed by main elements including compressor, condenser, expansion valve, evaporator, auxiliary condenser and drying chamber. The expansion valve expands refrigerant into the evaporator, the refrigerant is vaporized by absorbing heat, the gaseous refrigerant compressed by the compressor to a high pressure fluid into the condenser, and release heat. The refrigerant back to the reservoir, then evaporated through the expansion valve to complete refrigeration cycle. Humidity gas withdrawn from the drying chamber through the evaporator condensate cooling and dehumidification, become dry cold. The dry cold air through the condenser air heated to a high temperature and low humidity air. High temperature and low humidity air into the drying chamber, the material water is vapored out to complete the drying cycle.

2. Purpose
   Food and drug products curing for easy packing and transportation, milling and processing of agricultural products and dried herbs to improve product quality, sludge drying reduce processing costs.

3. Features
   Low temperature dehumidification dryer has low energy consumption, without changing the physical properties of stable quality, high volume reduction, odorless, no gas and dust generation, non-polluting wastewater.

4. Specification and Functions
   High energy efficient equipment, energy consumption per kilogram of weight reduction only 0.4kwh, under atmospheric pressure low temperature drying (45 ° ~ 60 °C), dried sludge weight reduction up to 75% volume reduction of 60%, the drying medium closed cycle, no emissions pollution and heat pollution.

5. Product Photo
Drying Treatment System
(Vacuum Disk Type)

1. Structure and Principle
   Housing for the double layer drum dryer (inside pass vapor), the body's interior is a rotatable agitator (inside pass steam), steam dryers for heating jacket and mixing spindle used to dry the sludge. The system design adopted closed operation, prevent sludge odor spills, reactor vacuum to reduce the boiling point to accelerate drying process. This system has PLC program control and human-machine interface operation, perform manual / auto and single / linked operations according to necessity.

2. Purpuse
   High efficiency sludge drying reduction processing system, the moisture content of about 75% to 85% of the wet sludge becomes less than 40% of dried sludge after sludge reduction process. After the reduction of dry sludge treatment facilities, can be transferred as a general covering of soil use, it can still reprocessing as fuel, fertilizers or other additives, reduce the main follow-up treatment costs, meet environmental reduction targets.

3. Features
   Chemical sludge and bio-solids best drying reduction system for paste and powder materials drying loss, applies easily to oxidized, explosive, strong stimulation materials.

4. Specification and Functions
   The system employs a batch mode of operation, the drying capacity according to customer demand for design, consumption per ton of dry sludge about 900 ~ 1200Kg vapor (varies depending on the nature of the sludge), the control system automatically operating dry processing system.

5. Product Photo

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DRYING TREATMENT SYSTEM
(Tower Disk type)

1. Structure and Principle
   Tower disk dryer system is a multilayered disc with harrow turn stirring, vertical type continuous drying apparatus, is conducting the drying-type contact dryer. The drying process will be contained within the hot body pass into fixed multilayered hollow disc, with the wet material on conducting indirect heating the metal in contact with the disk. The boiling point is evaporated under mechanical agitation plow rake leaves, so that the water continues to move forward roll material in operation within the state, the steam leaving the device from humidity discharge outlet, material transmitted from top to bottom to get finished drying requirements.

2. Purpose
   Organic sludge and inorganic sludge best drying reduction system, used for paste and powder materials, medicine, food, chemical and other industries dry materials.

3. Features
   Continuous drying apparatus, the temperature reaches the setting point, you can start automatic feeding drying. The drying process is stable and full use of heat energy to achieve energy savings, full automatic feeding drying and the material has been operating.

4. Specification and Functions
   The material is heated and fed into the dryer after quantitation using steam plodder machine. When the material is fed into the dryer for drying, blowers, heat exchangers, heat and wind speed subsidy. Dust generated by sludge drying machine is pumping by windmill to scrubber to be processed.

5. Product Photo

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TEL : 04-2630-5899  FAX : 04-2630-8299  E-mail : yciel@yciel.com  http : //http://www.ycicl.com
PLATE TYPE CONTINUOUS DRYER

1. Structure and Principle
Plate-type continuous dryer is to continuously send sludge cakes into feeding opening under constant feeding rate; cake is cutted to tiny grains and dropped to porous plate surface under continuous operation; machine will use auto poker to uniformly distribute the sludge grains; each plate is closely connecting to other plates to form conveyor shape to run, normally designed to 4~8 loops lining up by different layers. Then, hot airflow (or dry airflow at normal temperature) generated by varied energy source is introduced into the dryer; sludge grains will be directly blowed by hot airflow (or dry airflow at normal temperature) in the forward and backward stroke steadily to dry out moisture inside them. Vapor product is circulately introduced to regriating compressor to dehydrate, or to stake by inducing fan. Under the slight negative pressure operation, odor won’t dissipate out; normally the exhaust can meet emission standard. Or we can follow the physical property of drying treatment process to equip simple air polution protection facility, such as bag precipitator or waterwash scrubber, and able to meet environmental code.

2. Purpose
(1) Dry wastewater sludge.
(2) Dry farming products.
(3) Dry chemical process.
(4) Maintain.

3. Feature
(1) Consecutively send in/out sludge; can automatically operate, easy to manage and
(2) Sludge conveying plate is by single-ring, two-layer drying design; both upper/lower layer of conveying plate can load sludge and receive hot airflow (or dry airflow at normal temperature), better drying efficiency can derive rather than the ordinary conveying belt type dryer using single drying layer.
(3) Hot airflow (or dry airflow at normal temperature) directly blows to sludge cake, the heat transfer efficiency is higher than indirect dry, energy effectiveness is better.

(4) Module hot wind generator can operate by coordinating to various energy form including steam, electric heat or boiler oil, etc.

(5) Slight negative pressure operation; no odor dissipation; only require wet-type scrubbing tower or bag precipitator to treat exhaust in order to meet pollution protection code standard.

(6) Follow requirement to meet various dehydrating rate; the low limit is 20%.

(7) Available treating capacity: 6~25 Tons/day.

4. Product Photo
VACUUM DRYING FILTER PRESS

1. Structure and Principle
   (1) The vacuum drying filter press operates as a standard press, compressing the cake material with the feed pump. There will always be moisture remaining in the small void spaces between the solid cake particles.
   (2) Membrane plate squeeze: compressed air or steam cause expansion of the membrane plates, further reducing cake volume and moisture content. Free water is removed through this standard membrane filter operation.
   (3) The drying process begins after the membrane squeeze and slurry inlet closed. While the filter cakes are still close in the press, a vacuum is pulled on the liquid drain lines.
   (4) Heat is transferred to the cake from steam or hot water circulating through the core of membrane plate. The vacuum allows the moisture in the cake to vaporize at a reduced temperature.
   (5) As the cake dries and loses volume, the membrane plate construction allows the diaphragm to expand and maintain heat transfer throughout the drying cycle.

2. Purpose
   Dehydrate and direct dry up the organic/inorganic sludge.

3. Features
   (1) Solidified ratio of filtered sludge can reach 99%; moisture content is lower than 1%.
   (2) Associate the press, filtering and dehydrating process together in one shift rather than separated into several sections that would waste space and transporting manpower.
   (3) No the odor or secondary air pollution made in ordinary dryer’s operating process; no need to apply for emission permit.
   (4) Extremely low moisture content makes cake easy to apart; filter cloth cleaning or maintaining cost is reduced.
(5) Low power consumption; able to apply the low-pressure steam exhaust from factory in the process and largely save energy cost.

(6) No need to clean filter cloth: after dry, cake’s moisture content is largely reduced, the viscosity coefficient is low and cake separates from filter cloth neatly.

(7) Leading technology and mature experience can delicately combine the heat transfer and vacuum skills to rapidly evaporate and remove moisture.

4. Product Photo

5. Award (Certified) Items

(1) Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999.

(2) Industrial Development Bureau of MOEA certified the product for environmental protection quality standard in 2003.
VACUUM DRYER FILTER PRESS

1. **Structure and Principle**

   **Sludge Dryer:**
   Sludge is pushed into filter centre via the high-pressure pump to filter and compress, squeezing out about 60~70% water content at this stage. Then, the pump compresses again through the air film (this process is same as conventional filter); heat is introduced for indirect heating to the sludge in the vacuum state until dry (water content under 35%); after the treatment, sludge cake can be removed from the filter neatly without sticking. The course of process for each batch takes 6~8 hours.

2. **Purpose**

   Sludge drying for semiconductor, electroplating, dye manufacturing or other chemical sludge drying; sludge treatment for water purification plant, reservoir silt treatment, building sludge, tunnel engineering debris, manufacturing raw material hydrating and drying, food industry and steel mills, metal surface treatment industry, electronics, PCB, active sludge and bio-sludge, etc.

3. **Features**

   (1) Dehydrating + Vacuum + Drying Three – in – One.
   (2) Water Content from 99% to 30% below with one machine.
   (3) Recycled steam with 2~3 kg/cm² is available.
   (4) Efficiently saving running cost.
   (5) No Air pollution.
   (6) Patent Certificated in China & Taiwan.

4. **Product Photo**

5. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit</th>
<th>PAH-15</th>
<th>PAH-20</th>
<th>PAH-30</th>
<th>PAH-40</th>
<th>PAH-50</th>
<th>PAH-60</th>
<th>PAH-70</th>
<th>PAH-80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate No. of filter</td>
<td>Plate</td>
<td>15</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>Area of filter (m²)</td>
<td>36.3</td>
<td>48.4</td>
<td>72.6</td>
<td>96.8</td>
<td>121</td>
<td>145.2</td>
<td>169.4</td>
<td>217.8</td>
<td></td>
</tr>
<tr>
<td>Capacity (L/cycle)</td>
<td>450</td>
<td>600</td>
<td>900</td>
<td>1,200</td>
<td>1,500</td>
<td>1,800</td>
<td>2,100</td>
<td>2,400</td>
<td></td>
</tr>
</tbody>
</table>

台灣卜力斯股份有限公司 TAIWAN PASSAL CO., LTD.
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TEL: +886-3-313-2846  FAX: +886-3-313-2840  E-mail: laidaqqq@ms17.hinet.net  http://www.passal.com
SLUDGE ADVANCED CONDITIONING AND HIGH PRESSURE DEWATERING SYSTEM

1. **Structure and Principle**
   A cost-effective dewatering system for sludge is developed with a packaged in-depth dosing reactor and a high pressure membrane type filter press, which comprise (1) a smart diagnosis module, including sludge parameter sensing/controlling units, which detect several key parameters of sludge and control doping of reagent; (2) a microcontroller-PLC unit, processing above-mentioned detected parameter signals collected through sensors, then sending out instructions after analyzing those signals upon proprietary algorithm to control doping of reagents; (3) a reagent addition unit, receiving the above-mentioned doping control signals to add in reagents accordingly; (4) a high pressure membrane type filter press, maintaining feed pressure as high as 15kg/cm² and durable membrane for pressure filtration that results in reduced water content of sludge from 80~98% down to 40~60%.

**Principle:** This chemical conditioning method is to mix reagents and sludge through sol-gel synthesis, in which organic complexes are added to form metallic organic complex, then cell walls are preliminarily broken by controlling pH and reaction temperature, etc. Organics thus released are hydrated and oligomerized with those metallic-organic complexes through sol-gel process to form a more densified but better oxidizable nano-ceramic like microstructure. Upon high-performance mixing and conditioning, loosely flocs suspension within sludge can be broken and ridded, as adjustment of static potential and pH reconstruct granules via precipitation and complexing to form self-assembled microstructures. Upon adding cell lysing reagent and further sol-gel processing to excruciate water out of cells, more densely spatial microstructures are thus formed. Those excruciuated and interstitial water are discharged through homogeneously constructed microchannels upon consequential press filtration.

Fed into the high pressure membrane type filter press, microstructures and slurry phase of sludge is well reduced thus improving dewatering performance of the consequential press filtration to reduce water content of sludge from 80~98% down to 40~60%. The output volume or mass of final sludge cake can be therefore reduce no less than 50% as the filtered sludge cake still contains dry-base heat value of 2000~3500 kCal/kg, of which can be further utilized as resource regeneration such as environmental construction materials or substitute fuels.

2. **Purpose**
   (1) Especially useful for conditioning and dewatering of sludge containing massive organics and micro-biologics
   (2) Dewatering and conditioning of municipal sewage sludge.
   (3) Dewatering and conditioning of residual biologic sludge out of variety of industrial sewage
   (4) Further reduction of sludge volume prior to disposal, reclamation or landfills.
3. Features


(2) Continuous sludge treatment in automation with ease to manage and maintain.

(3) Automated operation to pre-diagnose variety of sludge and accordingly deploy different reagent addition sequences, timing and dosages via built-in microcontroller algorithm.

(4) Massively reducing usages of expensive flocculent yet to obtain better flocculation outcome of conditioned sludge.

(5) Automated high pressure membrane-type filter press resulting to increased sludge cake production at lower water content, as well as reducing batch operating times of filtration and pressing.

(6) No significant increase on absolute dry sludge in tot.

(7) Sludge cake upon in-depth dosing and high pressure filter pressing subjective to drying by natural ventilation or variety of dryers due to better volatility.

(8) In-depth dosing module of this system is authorized by Greenway Environment Technology Corp. to assemble and distribute in Taiwan, of which the proprietary technology has been successfully demonstrated and commercialized in Asia.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Sludge on dry basis(kg/d-24h)</th>
<th>2000</th>
<th>4000</th>
<th>6000</th>
<th>9000</th>
<th>15000</th>
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</thead>
<tbody>
<tr>
<td>In-depth dosing mixer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dimension, mm,L<em>W</em>H</td>
<td>1600<em>2250</em>2300</td>
<td>2000<em>2250</em>2300</td>
<td>2200<em>2250</em>2300</td>
<td>3000<em>2250</em>2300</td>
<td>4600<em>2250</em>2300</td>
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<tr>
<td>power rating, kw</td>
<td>9</td>
<td>11</td>
<td>19</td>
<td>26.4</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>CK-FP100-35APP</td>
<td>CK-FP100-71APP</td>
<td>CK-FP125-65APP</td>
<td>CK-FP125-91APP</td>
<td>CK-FP125-81APP*2台</td>
</tr>
<tr>
<td>High pressure membrane type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>filter press</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>filtration area, m²</td>
<td>53</td>
<td>109</td>
<td>153.6</td>
<td>216</td>
<td>384</td>
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<td>chamber volume, L</td>
<td>750</td>
<td>1545</td>
<td>2624</td>
<td>3690</td>
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<tr>
<td>dimension, mm,L<em>W</em>H</td>
<td>5720<em>1500</em>2280</td>
<td>8220<em>1500</em>2280</td>
<td>8620<em>1790</em>2780</td>
<td>10630<em>1790</em>2780</td>
<td>9860<em>1790</em>2780*2台</td>
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<tr>
<td>power rating, kw</td>
<td>8.6</td>
<td>9.3</td>
<td>11.2</td>
<td>12.7</td>
<td>22.5</td>
</tr>
</tbody>
</table>

太和環境企業股份有限公司

TAI HO ENVIRONMENTAL ENTERPRISES CO., LTD.
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TEL: +886-2-2518-3499  FAX: +886-2-2518-4336  E-mail: taiho@seed.net.tw  http://www.dewater.com.tw
Overview of Air Pollution Prevention and Control Equipment

Air pollution presents as the pollutants of dust, fume, particle, gas, mist, odor, smoke, vapor, etc., affects the human, animal and plant, damages our living environment.

Air pollutants consist of particulate and gas phases. The latter includes VOCs, SO₂, SO₃, H₂S, CS₂, NO, NO₂, CO, Cl₂, HCl, HF, etc. The five primary pollutants are carbon monoxide (CO), nitrogen oxide (NOₓ), hydrocarbon (HC), sulfur oxide (SOₓ) and particulate.

Ⅰ Air Pollution Prevention and Control Technology

Improper use of fuel, material, and process will result in air pollution. Thus, correcting the improper at the source is the simplest and best way to solve air pollution problem. If the cause of air pollution cannot be avoided, then the control equipment must be used to purify the polluted air. Figure 1 shows the normal practice of air pollution control technology and equipment.

The treatment methods of particulate, sulfur oxide, nitrogen oxide and volatile organic compounds are described as following:

1. Particulates: They can be removed by physical functions such as inertia force, filtration, washing and electrostatic dust collecting equipment.

2. Sulfur Oxides: They can be treated and recovered by chemical processes such as neutralization and oxidation. The feasible processes include wet, dry and semi-dry methods.

3. Nitrogen oxides: They can be removed by reduction or oxidation reactions to form non-toxic nitrogen or nitrates.

4. VOCs & Odors: They can be removed by absorption, adsorption and thermal oxidation.
II. Description of Air Pollution Control Equipment

1. Dust Collecting Equipment

Dust collecting equipment is well-developed in Taiwan, has been widely applied to all industries. The products include Bag House, Cartridge Filter, Wet Scrubber, Electrostatic Precipitator, Cyclone, etc.
2. **De-SOx System**

The Flue Gas Desulfurization System (FGD) can be classified as wet, dry and semi-dry methods.

The wet FGD method is widely applied. Sodium hydroxide is used to react with SO$_x$ to form by-products such as sodium sulfate.

The dry FGD system is to inject dry powder to react with SO$_x$. The reacted product can be collected by a Bag House or ESP.

The semi-dry FGD system uses calcium or sodium hydroxide to remove SO$_x$. The agent solution mist is injected into the flue to react with SO$_x$. The flue heat will evaporates all the water, dry sodium or calcium salts are collected by a Bag House or ESP.

3. **De-NOx System**

Except oxidation/reduction wet method, mainly are Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) methods. SNCR method injects NH$_3$ to convert NO$_x$ into N$_2$ and H$_2$O at high temperature. The SCR method has an additional catalytic so that the reaction can proceed under a lower temperature of 250~400℃. Materials such as Pt, V and Ti in the form of pellet, cylinder, sphere, ring, plate and honeycombs are used as the catalyst. Normally the catalyst should be replaced every 2 to 4 years.

4. **Volatile Organic Compounds Treatment and Recovery System**

The “Adsorption” is an operation to use the surface reactive capability of materials, such as activated carbon & zeolite, to capture certain substances from a gas stream. It is cost-effective to remove selected pollutants from waste gas until the absorbent is saturated. Adsorption is advantageous for treating low concentration gaseous pollution such as VOCs and odors.

The adsorption equipment can be designed as a Rotary Concentrator. It adsorbs pollutants and recovers high concentration...
stream by a hot air, then send to thermal oxidizer to destroy the VOCs completely.

The VOCs can be destroyed to CO$_2$ and H$_2$O completely at certain high temperature. The direct Thermal Oxidizer (TO) is an effective way, but consumes large amount of fuel. So it is available for high concentration VOCs.

A Regenerative Thermal Oxidizer (RTO) utilize ceramic materials to recover the heat of oxidized hot air, is an advantage of energy saving.

A Catalytic Oxidizer (CO) can low down the oxidation temperature, is the most effective for energy saving. But the catalyst needs to renew periodically.

The exhaust of VOCs is an important factor of air pollution and global warming. As a fact VOCs is also a heat resource itself, how to solve the VOCs pollution problem and recycle its heat energy are very important to our industry.

5. **Fan & Blower**

Fan and blower are classified depending on their pressure ability, mainly used on industrial ventilation, waste air exhaust and material conveying. They are necessary and important equipment for air pollution control process. The manufacturers have sufficient technic for low/medium/high pressure and even vacuum products. The structure materials include carbon steel, stainless steel, cast iron, anti-abrasion steel, PP, FRP, etc.
Overview of Noise Prevention and Control Equipment

Noise is a sound wave of irregular frequency and incompatible pitch that irritates those who can hear it. Manufacturing plants can easily produce so much noise to lower the environmental quality of the surrounding areas. Further, in addition to adversely impacting the efficiency of those working in the plant, the noise will also damage the workers’ hearing. Thus, noise prevention and control is a serious concern. Sources of industrial noise are shown in Table 1.

Table 1: Typical Sources of Industrial Noise

<table>
<thead>
<tr>
<th>Category of Noise</th>
<th>Typical Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incineration Process</td>
<td>Furnaces</td>
</tr>
<tr>
<td>Impact Process</td>
<td>Hammer</td>
</tr>
<tr>
<td>Electrical Equipment</td>
<td>Motor, Generator</td>
</tr>
<tr>
<td>Gas Flow</td>
<td>Intake, Jet, Emission</td>
</tr>
<tr>
<td>Contact between Metals</td>
<td>Gear Set</td>
</tr>
<tr>
<td>Fluid Flowing in Confined Spaces</td>
<td>Wind Pipe, Water Pipe, Valve</td>
</tr>
<tr>
<td>Contact between Flowing Fluid and Metal Surface</td>
<td>Compressor, Fan, Pump</td>
</tr>
</tbody>
</table>

I. Strategies for Preventing and Controlling Noise:

There are three strategies for preventing and controlling industrial noise

1. Improvement and Control of Noise Sources.

2. Alteration of the Noise Paths.

II  Domestic Equipment Frequently Used for Noise Prevention and Control

Methods commonly used for preventing and controlling noises include: mufflers, muffling boxes (ditches), noise control panels and installing noise control wall (screening or curtain) as explained in the follows:

1. **Installing Mufflers:**
   Based on adsorption, reflection and interference of sound waves, the muffler is used to reduce noise. It is mostly installed in emission pipes, exhausting pipes and pressure relief pipes to reduce the noise caused by high-speed gas exhausted from compressors, generators and pressurized tanks. The muffler is made of steel plate as a diffuser to disperse the kinetic energy of a gas stream emitted from a chamber, hole or intake. It consists of parallel plates, center column or holes to absorb the high-pitch frequency waves of the noise for achieving noise reduction.

2. **Installing Muffling Box (Ditch) or Panels**
   Muffling boxes (ditches or panels) apply the same principle as mufflers to reduce noise but they are used in large emission pipes or where it is inconvenient to stall mufflers. Using this method, the gas velocity in either internal pipes or near the exhaust exit must not exceed 15 cm/sec to avoid the secondary noise problems caused by high gas flow velocity. Generally, this type of equipment will reduce noise of more than 10 dB depending the material and area of internal noise absorbent.
3. **Installing Noise Reduction Wall (Panel or Screen)**

   This method depends on installing an obstacle between the noise source and the receiver to increase the noise transmission path and energy consumption for achieving noise reduction. Generally, the noise reduction wall will reduce 5 – 15 dB noise with a maximum of 25 dB. The noise reduction efficiency depends on the height and the material as well as method of installation of the wall installed.

   There are a few domestic companies specialized in manufacturing noise prevention and control equipment such as noise reduction plate glass, noise reduction boxes, noise reduction doors and mufflers being the major products.
PULSE JET BAG FILTER

1. Structure and Principle
   After dusty air gets through the sedimentation chamber for even distribution of the airflow and after pre-filtering, the filter bag enabling dusts to adhere to the dust tube and create dust cakes filters the dust. Then, by compressing against high-pressure air, dust is vibrated to fall behind the dust hopper through air spray reversed scrubbing; dusts then pass through the screw conveyor and rotary valve and are discharged and collected.

2. Purpose
   Asphalt mixing, burning, incinerating, lumber industry, chemical engineering, pharmacy, and electronic industry, etc. processing to collect dust for recovery and delivery treatment.

3. Specifications and Functions
   (1) Outer covering material quality: SUS304, SUS316, galvanized sheet, SS400.
   (2) Filter material: Varies according to the types of pollutant. Choices can be made to suit the needs.
   (3) Process load: designed for varied demands
   (4) Processing efficiency: May reach above 99.8%.

4. Product Photo

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PULSE SPRAY-TYPE FABRIC FILTER

1. Structure and Principle

This equipment consists of a filter unit, collection funnel, ash discharge system, filter system, and dust spray-off system.

(1) The filter unit must have sufficient pressure resistance capacity and weight-bearing capacity to keep the fabric filter and Venturi pipe frame from deforming.

(2) The collection funnel is designed according to particular dust properties; the rest of the corners may not be lower than the angle of the lowest flow, and the unit is fitted with a maintenance hole.

(3) Ash discharge system consists of a rotating release valve or spiral conveyor and can be used independently or combined according to particular dust properties. Discharge is continuous to deter deposit accumulation.

The filter system is fitted with choice of fabrics according to exhaust properties; when particles of certain diameter pass through the filter, larger particles will move along inertia conflict and smaller particles will disperse and attach to the fabric threads.

(4) While forming particle bridges between threads, an attachment layer with numerous tortuous micro-pores is also formed. Generally the empty-space rate is around 80-85%, and these micro-pores serve to capture micro-particles.

(5) Dust spray-off system: As the name informs it relies on the instant spray force of high-pressure air to bring large air volume into the fabric filter via the Venturi principle for the filter surface to vibrate and consequently shake off the dust caked on the filter surface.

When passing through the filter, the air carrying the dust leaves dust on the exterior of the fabric filter. For constant filtering wind volume and pressure difference, every filter must be continuously washed. This system is equipped with compressed air reverse wash. The fitted magnetic valve is controlled via an electronic sequencing circuit, which is triggered at preset intervals and operates the film. Once the film is opened, the compressed air jettisons in the pipeline fitted at the top of the fabric filter loosens the dust or dust bits attached to the outside of the filter into the catcher.
2. **Purpose**
   Recycling processing containing dust waste gas.

3. **Features**
   (1) Maximum dust removal efficiency.
   (2) Minimize requirement of power equipment to cut operating and maintenance costs.
   (3) Reduce filter size.
   (4) Elevate filtering speed.
   (5) Greater processing capacity, maintaining nearly consistent processing capacity.
   (6) Reduce filter wear and tear to enhance effective filter lifespan.
   (7) Widely applicable in dust producing operations.

4. **Specifications and Functions**
The unit and support materials are SUS304, 316, 316L grade stainless steel, or SS400 rustproof treated then stray painted. The filter frame is made of SUS304 or 316 grade stainless steel. The filter fabric is selected according to particular dust’s physical properties and exhaust temperature.

5. **Product Photo**
FABRIC FILTER

1. Structure and Principle

Bag filters capture dusts and particles in waste gas and release the clean gas. In addition, in order to maintain a constant operation pressure, routine maintenance of filter is required. Diamond provides three types of products to remove dusts and particles captured by bag filters: Pulse jet type, Reverse air type, Motor shaking type.

2. Purpose

(1) Treatment of air containing particles or dust from incineration plants.
(2) Filtration equipments of smelters, drying oven, metal heat treatment, petrochemical and biochemical plants in process line.
(3) End recovery of pneumatic conveyors.

3. Features

(1) Filter cleaning is automatically controlled.
(2) Automatic dust cake removal allows easy and reliable operation.
(3) Good filtration efficiency
(4) Long filter bag life.

4. Product Photo
BAG FILTER-PULSE TYPE

1. Structure and Principle
   Bag filtered precipitator applies filter bag to capture dust; it not only works by letting flue gas pass through the fine bag surface, the more important process is to use the cumulate dust layer improving the dust capture function.
   The duct-collecting mechanisms include gravity sink, inertia impact, directure interception, diffusion and static electricty abstraction; the major ones are the inertia impact, directure interception, and diffusion.

2. Features
   Applied to incinerators of all sorts, cement plant, wood machining plant and other plants capturing dusts from flue gas or dust source.

3. Specification and Functions
   Capture, recycle and transfer powder & dust from the process made in asphalt blending, incinerator, wooden work, chemical industry and kiln industry.

4. Product Photo

   ![Product Photo](image-url)
ASH COLLECTION SYSTEM

1. Structure and Principle
   Exhaust is passed through the fabric filter to screen off particles and achieve cleaning by utilizing the breathable property of the fabrics.
   (1) Inertial impact
   (2) Shielding
   (3) Dispersion
   (4) Gravity sedimentation
   (5) Static suction

2. Features
   Capable of effective and efficient air particle removal

3. Product Photo
SMALL PULSE-SPRAY FABRIC FILTER

1. **Structure and Principle**

Upon exhaust input, the inner stopper will catch larger particles and deposit it into the collector, meanwhile exhaust flow is rectified by the stopper to distribute waste-gas evenly outside of the filter, thus smaller particles in exhaust will be captured by the filter, screened, and air released and channeled to the upper gearbox and then released via the fan. The particles collected by the filter gradually accumulate to form cakes; the timer can be programmed to automatically open-air valve and introduce high-pressure air to instantly shatter the particle deposits into the bin below for dust removal.

2. **Purpose**

For particle filtering at foundries, mechanical shops, electronic factories, ceramic industry and petrochemical factories.

3. **Features**

1. Equipped with a digital monitor for recording air volume and velocity data.
2. Minimum equipment space requirement for maximum filter space.

4. **Notes**

1. The equipment complies with Japan Environmental Association “Certification” registration No. 0064, 0065.
2. The equipment is TUV certified per No. 41008253 (ISO 9001:2000).

5. **Specification and Functions**

Housing Material: carbon steel sheet. Filter Material: polyester, etc.

<table>
<thead>
<tr>
<th>Model</th>
<th>FXII-7PB</th>
<th>FXII-15PB</th>
<th>FXII-22PB</th>
<th>FXII-37PB</th>
<th>FXII-55PB</th>
<th>FXII-75PB</th>
<th>FXII-110PB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>3-phase exchange 220V/50Hz or 60Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output (kw)</td>
<td>0.75</td>
<td>1.5</td>
<td>2.2</td>
<td>3.7</td>
<td>5.5</td>
<td>7.5</td>
<td>5.5×2</td>
</tr>
<tr>
<td>Wind volume (m³/min)</td>
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<td>12</td>
<td>10</td>
<td>20</td>
<td>25</td>
<td>15</td>
<td>30</td>
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<tr>
<td>Static Pressure (mmAq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60Hz</td>
<td>252 242</td>
<td>274 265 240</td>
<td>280 260 230</td>
<td>275 265 250</td>
<td>300 280 250</td>
<td>320 280 250</td>
<td>285 270 240</td>
</tr>
</tbody>
</table>

- Power: 3-phase exchange 220V/50Hz or 60Hz
- Output (kw): 0.75, 1.5, 2.2, 3.7, 5.5, 7.5, 5.5×2
- Wind volume (m³/min): 10, 12, 10, 20, 25, 15, 30, 40, 55, 30, 60, 80, 40, 80, 100, 80, 120, 140
- Material: Polyester
- Space (m²): 9, 13, 20, 26, 40, 52, 74
- Electrode Count: 4, 6, 9, 12, 18, 24, 24
- W (A) × D (B) (mm): 550×550, 650×650, 770×770, 900×900, 1,300×900, 1,700×900, 1,700×900
- H (H) (mm): 1,593, 1,765, 1,785, 1,850, 1,916, 1,971, 1,971
- Collector Capacity (L): 20, 25, 25, 45, 40×2, 35×3, 35×3
- Suction Aperture (D) (mm): ψ125, ψ150, ψ200, ψ250, ψ300, ψ300, ψ400
- Suction Position (c/m) (mm): 483/190, 645/225, 605/255, 490/270, 490/270, 490/200
- Compressed Air – Standard Consumption (NL/min): 15, 20, 20, 35, 40, 70, 80
- Total Weight (kg): 170, 240, 320, 400, 500, 600, 750

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SMALL OSCILLATING FABRIC FILTER

1. **Structure and Principle**

   Upon exhaust input, the inner stopper will catch the larger particles and deposit it into the collector, meanwhile exhaust flow is rectified by the stopper to distribute waste-gas evenly outside of the filter, thus smaller particles in exhaust will be captured by the filter and screened, and air released and channeled to the upper gearbox before released via the fan. The fitted oscillator then shakes off the particle deposits into the bin below for manual removal.

2. **Purpose**

   For particle filtering at foundries, mechanical shops, electronic factories, ceramic industry and petrochemical factories.

3. **Features**

   (1) High filter rate.
   (2) Require small space.
   (3) Easy operation.
   (4) Easy maintenance.
   (5) Low noise.

4. **Specifications and Functions**

   Filter made of silk cotton.

<table>
<thead>
<tr>
<th>Model</th>
<th>EXΠ -400H</th>
<th>EXΠ - 750H/M</th>
<th>EXΠ - 1500H/M</th>
<th>EXΠ - 2200H/M</th>
<th>EXΠ - 3700H/M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>3-phase exchange 220V/50Hz or 60Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor (kw)</td>
<td>0.4</td>
<td>0.75</td>
<td>1.5</td>
<td>2.2</td>
<td>3.7</td>
</tr>
<tr>
<td>Wind volume (m³/min)</td>
<td>5</td>
<td>10 22</td>
<td>20 25 30</td>
<td>30 40 45</td>
<td>40 50 60</td>
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<tr>
<td>Static Pressure (mm)</td>
<td>60Hz</td>
<td>280 258 245</td>
<td>280 270 250</td>
<td>265 250 238</td>
<td>270 260 250</td>
</tr>
<tr>
<td></td>
<td>50Hz</td>
<td>195</td>
<td>250 235</td>
<td>265 260 250</td>
<td>280 260 245</td>
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<tr>
<td>Filter</td>
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<td>W(A)xD(B) (mm)</td>
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<td>524×524</td>
<td>624×624</td>
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<tr>
<td>H (mm)</td>
<td>740</td>
<td>1,280</td>
<td>1,380</td>
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<td>1,740</td>
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<td>Bin Capacity (L)</td>
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<td>20</td>
<td>30</td>
<td>20×2</td>
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<tr>
<td>Suction Aperture (D) (mm)</td>
<td>ψ 100</td>
<td>ψ 125</td>
<td>ψ 200</td>
<td>ψ 250</td>
<td>ψ 250</td>
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<td>Suction Position (c/m) (mm)</td>
<td>273/185</td>
<td>630/160</td>
<td>630/164</td>
<td>348/224</td>
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<td>Manual Manual 0.2kw Manual 0.2kw Manual 0.2kw Manual 0.2kw</td>
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<td></td>
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<tr>
<td>Colour</td>
<td>Paint 534</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total Weight (kg)</td>
<td>48</td>
<td>110 125</td>
<td>155 165</td>
<td>225 235</td>
<td>235 245</td>
</tr>
</tbody>
</table>

台鈺新東機械股份有限公司
TAIWAN SINTONG MACHINERY CO., LTD
新北市新莊區化成路 415 號 No. 415, Hwa Cheng Rd., Hsin Chuang District, New Taipei City, Taiwan
TEL:+886-2-8521-5837  FAX:+886-2-8522-1774  E-mail:sinto@ms26.hinet.net  http://www/twsinto.com.tw
PIPE FILTER SYSTEM

1. Structure and Principle
Upon receiving the exhaust, the interior stopper will capture and deposit coarser powders in the funnel. The passed-through gas is evenly distributed into various pipes before passing the fabric filter for capture of finer powders; clean air is then suctioned out via the fan to the stack for release. The collected powders gradually form into cakes. By using a timer, the valves are opened/closed as timed. When the valves are closed and the interior air is still, the fitted vibrator shakes the powders into the collection funnel.

Through this process, dusts in the chambers vibrate to shake off dusts along the automatic cycle. This process enables treatment of even the tiniest smoke haze. Finally, dusts are then released via the spiral conveyor and rotating valves.

2. Purpose
Recycle and collection of general powder dusts, foundries, cement plants, ceramic operations, petrochemical and food industries.

3. Features
Efficient shake-off for corpuscles.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>TDC-10CR</th>
<th>TDC-15CS</th>
<th>TDC-20CS</th>
<th>TDC-25CS</th>
<th>TDC-33CS</th>
<th>TDC-44CS</th>
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<td>150</td>
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<td>288</td>
<td>216</td>
<td>288</td>
<td>384</td>
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<td>0.4kw ×3set</td>
<td>0.4kw ×4set</td>
<td>0.4kw ×3set</td>
<td>0.4kw ×4set</td>
<td>0.4kw ×4set</td>
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<td>4</td>
<td>4</td>
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<td>0.4kw ×4set</td>
<td>0.4kw ×3set</td>
<td>0.4kw ×4set</td>
<td>0.4kw ×4set</td>
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<tr>
<td>Dust Release Format</td>
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<tr>
<td></td>
<td>C</td>
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<td>3,590</td>
<td>3,590</td>
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<tr>
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<td>6,600</td>
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<td>7,520</td>
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TAIWAN SINTONG MACHINERY CO., LTD
新北市新莊區化成路 415 號　No. 415, Hwa Cheng Rd., Hsin Chuang District, New Taipei City, Taiwan
TEL : +886-2-8521-5837 FAX : +886-2-8522-1774 E-mail : sinto@ms26.hinet.net http://twsinto.com.tw

— 163 —
<table>
<thead>
<tr>
<th>Model</th>
<th>TDC-55CS</th>
<th>TDC-66CS</th>
<th>TDC-83CS</th>
<th>TDC-99CS</th>
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<td>0.4kw×5set</td>
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<td>0.4kw×8set</td>
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<tr>
<td>Pipe Chamber No</td>
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<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
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<td>2</td>
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<td>2</td>
</tr>
<tr>
<td>Dust Release Motor</td>
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<td>1.5kw×1set</td>
<td>1.5kw×1set</td>
<td>2.2kw×1set</td>
<td>2.2kw×1set</td>
<td>1.5kw×1set</td>
</tr>
<tr>
<td>Gate, Cylinder, Electromagnetic Valve</td>
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<td>5set</td>
<td>6set</td>
<td>7set</td>
<td>8set</td>
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<td>7,820</td>
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</tr>
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</table>

5. Award (Certified) Items

(1) The product meets with Japan Environmental Protection Association’s “Certification” 0064 and 0065 standards.

(2) The product is TUV certified under No. 41008253 (ISO9001: 2000)
AIR-SHRED FABRIC FILTER

1. Structure and Principle
Particle-carrying air is channeled via the upper part of the machine to meet with the baffle plate; the high velocity of which causes the flow to change direction. This process separates particles into various grades: coarser particles fall directly into the silo whereas the finer ones adhere to the fabric filter to achieve particle screening. Particles adhering to the fabric filter are shaken off via a high-pressure air jet, and air passed through the filter is channeled through the filter’s ultra Venturi to the upper part of the machine for release by the fan.

2. Purpose
Gathering dusts from general powder dusts, and dust filtering for conveyors, casting operations, cement plants, steel plants, ceramic and chemical engineering materials, food industry

3. Features

   (1) Ultra Jet Venturi is adopted for high-pressure air jetting to shake off dusts at an instant and deter dust from depositing to ensure optimum filtering efficiency.

   (2) Instant spray-off method translates to fixed pressure loss and less wind fluctuation for high efficiency.

   (3) Filter replacement is done from the top access, which enables easy, convenient inspection and replacement.

   (4) Filter replacement by a snap ring enables easy replacement and excellent sealing during operation.

   (5) The cycle time required is 1/10 of regular dust filter system.


   (7) Especially suitable for cleaning air of high particle concentration.
4. Specifications and Functions

Housing material: carbon steel     Fabric filter: polyester, etc.

<table>
<thead>
<tr>
<th>Model</th>
<th>UDC-86PR</th>
<th>UDC-8PR</th>
<th>UAC-812PR</th>
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<tbody>
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<td>173</td>
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<td>Filter Pipe (pcs)</td>
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<td>72</td>
<td>96</td>
</tr>
<tr>
<td>Air Valve</td>
<td>6</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Discharge Motor</td>
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<td></td>
</tr>
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Machine Dimensions (mm)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<td></td>
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<td>2,113</td>
<td>8,220</td>
<td>4,100</td>
<td>3,120</td>
<td>1,000</td>
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<tr>
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<td>2,042</td>
<td>2,113</td>
<td>8,370</td>
<td>4,100</td>
<td>3,270</td>
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<td>4,100</td>
<td>3,620</td>
<td>1,000</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Air Consumption

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<thead>
<tr>
<th></th>
<th>120L/min</th>
<th>180L/min</th>
<th>240L/min</th>
</tr>
</thead>
</table>

5. Award (Certified) Items

(1) The product meets with Japan Environmental Protection Association’s “Certification” 0064 and 0065 standards.

(2) The product is TUV certified under No. 41008253 (ISO9001:2000).
MOBIL AIR PURIFIER

1. Structure and Principle
   The following chart illustrates the processing sequence for AW/AB lines.

2. Purpose
   AW line is for processing general welding smoke.
   AB line is for processing organic solvent odor, toxic gas, odor, smoke and particulates.

3. Features
   (1) Semi-auto reserve washing device offers simple operation.
   (2) Excellent purifying efficacy capable of filtering 99.7% strong of over 0.2 μm.
   (3) Polluted air is sucked into the equipment via a high-speed suction arm to deter operator from inhaling bad air.
   (4) Specially designed filters are capable of screening off 99% to 0.3 mm, and also able to purify toxic gases and odors.

4. Specification and Application
   (1) Standard models.
      AW-900, AB-2,000/3,000.
   (2) Customised according to environment requires approximately one month for delivery.

5. Product Photo

光騰工業科技股份有限公司
EASTON ENGINEERING INTERNATIONAL CORP.
新北市三重區重新路五段 609 巷 14 號 7 樓之 9
7F-9, No. 14, Lane 609, Sec. 5, Chung Hsin Rd., San Chung District, New Taipei City, Taiwan
TEL：+886-2-2999-5763  FAX：+886-2-2999-5764
E-mail：easton99@ms21.hinet.net  http://www.easton-eng.com.tw
BAG TYPE DUST COLLECTOR

1. **Structure and Principle**
   Dust trough filter bag by blower. For keep filter bag normal working and efficiency of front part by high pressure de-dusting.

2. **Purpose**
   This equipment is suitable for all mills dust pollution.

3. **Features**
   This equipment is automatic de-dusting, working time depends on your necessary.

4. **Specifications and Functions**
   - Q: 8,000 m³/min
   - SP: 400 mm AQ
   - M: 30 hp ~ 1,250 hp
   - N: 890
 STEELWORKS ARC FURNACE  
DUST-COLLECTING EQUIPMENT

1. Structure and Principle

Principles:
(1) During the process in smelting the steel, there will be able to produce a great deal of powder to go to the surroundings of the factory, and the temperature also reaches more than 1,500°C.
Therefore, it will suck and conduct into the burning tower at the furnace inlet from the dust vacuuming location to burn the carbon monoxide again and lower its temperature, and then, getting rid of bigger granules to conduct into the cooling tower for lowering the temperature at the second time. After removing the granules to conduct into the second windpipe to be cooled until the temperature is getting down and entered inside the dust collecting room.
As a result, it can keep the safety and the life of clothing pipe and reach the effect of collecting dust by such a process.

Structure:

(1) Work of Main frame:
A. It’s available for 8 sets~10 sets or 16 sets to assemble an entire frame in the dust-collecting room.
B. It’s able to control the dust-collecting and the dust-removing in each dust-collecting room.
C. There is an H-shaped steel with the structure of 200×200 being assembled by L3” and reinforced materials.
D. The surface is placed by a powder coating plate with soundproof and heatproof effects.

(2) Dust Vacuuming Windpipe:
SS41 6t, D=Φ3,000, Φ2,400, Φ2,000.

(3) Dust Vacuuming Windpipe:
SS41 3~4t, It’s set up according to the work site.

(4) Burning Tower: SS41 9t, 12t, 15t.

(5) Cooling Tower:SS41 9t, 12t.
2. Purpose

(1) Arc furnace dust-collecting in the steelworks.

(2) Collect and remove the mine dust pollution at each plant.

3. Features

Oversized dust-collecting equipment. A model of fan performance pipeline layout air cover. Back washing operation to the flow speed. The repair system of silo separation is flexible either big or small. And it depends on the demand to select the filter materials and set to keep the energy and the frequency for the bag, as well as stabilizing the pressure of the system in order not to result in the improper dust cleaning. We have a complete planning system for the above features.

4. Specification and Functions

(1) Type: back washing, vibration and pulse.

(2) Dust Vacuuming Fan Horse Power: 5HP ~1,750HP.
PULSE – HIGH TEMPERATURE BAG FILTER HOUSE

1. Structure and Principles
   The principle used for this filter is similar to that of a cartridge type dust gatherer. When waste-gas containing dust enters into the dust gatherer and flows through the stopper board and deflector, the gas will be evenly distributed on the outside of each filter bag and turn the dust into cake form. The machine then activates the solenoid valve (its reverse-washing time is configured by the procedure controller) to push the compressed air (5kg/m²) through the venture tube and generate pulsation waves. The pulsation waves then shake the dust to the bottom of the dust gatherer and extract the dust out through the releasing valve. Due to the fact that high-temperature waste gas is sometimes sticky, a pre-powdered system must be in place to protect the filter bags.

2. Purpose
   Chemical-petroleum plants, bituminous mixing plants, ceramic plants, recycling plants, and waste incinerators.

3. Features
   (1) Filtered gas meets the environmental protection standards.
   (2) The powder is recyclable to prevent wastage.
   (3) The filter bags are designed to be pulled out upward for replacement, so workers will not be contaminated.

4. Product photo
   ![Product Photo]
PULSE JET FILTER

1. Structure and Principle
   The dirt is getting into from dust collection machine. A fender can apply an airflow distributing whole place and using a deep bed filter to collect. Fresh air exhaust up outside, every deep bed filter is use program control utensils to exhaust outside.

2. Purpose
   Dry powders produced in all kinds of manufacture procedure can be collected.

3. Features
   (1) At least ninety-nine percent of dust collection efficiency is. Achieved.
   (2) The filter bags are highly breathable and capable of treating massive amount of wind volume.
   (3) Easy to maintain and disassemble; Long usage life.

4. Specifications and Functions
   Filter area: 10~600m².

5. Product Photo
AUTOMATIC PULSE JET BAG FILTER

1. Structure and Principle

   Cleaning of Bag Filter

   The dust-laden air is drawn on to the filter bags, where the dust is retained on the outer surface of the bag. To maintain continuous operation each row of bags must be regularly cleaned. In this system cleaning operation is achieved by reverse jet of compressed air. The electronic time sequential controller activates each pilot valve in sequence at predetermined intervals on a continuous cycle. The pilot valve in turn opens the diaphragm valve. The multi-nozzle jet tube through the insert header into the filter bag releases a short burst of compressed air. The accumulated dust or dust cake is dislodged from the bag surface and falls into a collection hopper beneath. Following figures show the cleaning cycle of filter bag and operation of solenoid valve and diaphragm valve.

2. Purpose

   (1) Chemical & Food Industries: Grinder, Mixer, Conveyor, Silo inlet, Bag filling.
   (2) Ceramic industries: Crusher, Mixer, Press, Conveyor.
   (3) Machinery industries: Grinder, Lathe, Polishing, Welding.
   (5) Fertilizer industries: Silo inlet, Conveyor, Mixer, Bag filling.

3. Features

   (1) Highest filtration efficiency.
   (2) No moving parts in mechanism makes it the least maintenance.
   (3) Reduce volume of collector unit.
   (4) High air to cloth ratio.
   (5) Constant and small pressure drop across filter achieves constant and large air volume.
   (6) Total pressure across collecting unit is low Reduce bag wear.
   (7) Widely applicable for the recovery equipment of various industries.
4. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Filter area (m²)</th>
<th>No. of filter dag</th>
<th>No. of solenoid valves</th>
<th>Approx wt. (kg)</th>
<th>Dimension Max</th>
<th>Dimension Min</th>
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<td>408</td>
<td>51</td>
<td>13,000</td>
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<td>3.38 1.93</td>
</tr>
</tbody>
</table>

5. **Product Photo**

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**FAIR TECHNICAL ENGINEERING CO., LTD**

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HIGH AREA PULSE JET BAG FILTER

1. Structure and principle

Cleaning of Bag Filter The dust-laden air is drawn on to the filter bags, where the dust is retained on the outer surface of the bag. To maintain continuous operation each row of bags must be regularly cleaned. In this system cleaning operation is achieved by reverse jet of compressed air. The electronic time sequential controller activates each pilot valve in sequence at predetermined intervals on a continuous cycle. The pilot valve in turn opens the diaphragm valve. The multi-nozzle jet tube through the insert header into the filter bag releases a short burst of compressed air. The accumulated dust or dust cake is dislodged from the bag surface and falls into a collection hopper beneath. Following figures show the cleaning cycle of filter bag and operation of solenoid valve and diaphragm valve.

2. Purpose

(1) Electronics : CNC drilling, Routing, Cutting, Laminating, V-cut.
(2) Chemical & Food Industries : Grinder, Mixer, Conveyor, Silo inlet, Bag filling.
(3) Ceramic industries : Crusher, Mixer, Press, Conveyor.
(4) Machinery industries : Grinder, Lathe, Polishing, Welding.
(6) Fertilizer industries : Silo inlet, Conveyor, Mixer, Bag filling.

3. Features

(1) Highest filtration efficiency.
(2) Small Volume and small footprint.
(3) Constant exhaust air volume.
(4) High filter area, Low press drop.
(5) Widely applicable for dust collecting of various industries.
### 4. Specifications and Functions

<table>
<thead>
<tr>
<th></th>
<th>Filter area (m²)</th>
<th>No. of filter element</th>
<th>No. of solenoid valves</th>
<th>Dimension A (mm)</th>
<th>Dimension B (mm)</th>
<th>Approx. wt (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEF-24</td>
<td>24</td>
<td>6</td>
<td>3</td>
<td>1,000</td>
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<td>950</td>
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<td>CEF-200</td>
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<tr>
<td>CEF-600</td>
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<td>6,200</td>
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<td>CEF-700</td>
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<td>177</td>
<td>59</td>
<td>7,150</td>
<td>1,850</td>
<td>3,200</td>
</tr>
</tbody>
</table>
BAG-FILTER DUST COLLECTOR

1. Structure and Principle
   (1) Dust-contained air is sucked to bag filter chamber from bottom up; dust is absorbed on bag filter surface; the treated clean air flows out from top of the equipment. Use air spray to backwash bag filter and dust is collected to dust collection tank and remove off.
   (2) The bag cleaning apparatus is installed on top of bag filter; while in operation, use compressed air (7kg/cm²) to spray into bag filter instantly and introduce secondary air in a volume 5~7 times more than the primary one; making bag filter expand and vibrate and thus get the air backwash effort.
   (3) While bag cleaning, the cleaning time of each bag set is only 0.1 sec, almost no influence to filtering area; the cleaning interval to one bag set is about 3 sec cyclically, the overall pressure of bag filter is kept in constant, pressure deviation is tiny and the equipment can maintain in a stable operation status.

2. Purpose
   (1) Dust collection in ordinary factories.
   (2) PCB: work with edge-grinder, V-CUT machine, PP stripping machine and board-cutting machine.
   (3) Ordinary factories: applied to dust collection of lathe, miller, grinder, hole-cutter, polish grinding machine, plane grinder and chemical machine.

3. Feature
   (1) High dust collecting efficiency.
   (2) Low pressure drop.
   (3) Air flowrate is outstanding.
   (4) Easy to maintain and repair.
   (5) Various application models.

4. Product Photo

3000HP Arc furnace dust collect Bag filter
## 5. Specification and Functions

<table>
<thead>
<tr>
<th>Specification</th>
<th>Model</th>
<th>RT-10</th>
<th>RT-25</th>
<th>RT-30</th>
<th>RT-40</th>
<th>RT-50</th>
<th>RT-60</th>
<th>RT-75</th>
<th>RT-10 0~300</th>
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<td>Air flowrate m³/min</td>
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<td>40</td>
<td>90</td>
<td>120</td>
<td>160</td>
<td>200</td>
<td>250</td>
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<tr>
<td>Filtering area m²</td>
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<td>76</td>
<td>98</td>
<td>127</td>
<td>155</td>
<td>200</td>
<td>240</td>
<td></td>
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<tr>
<td>Filtering cloth amount Piece</td>
<td></td>
<td>48</td>
<td>108</td>
<td>120</td>
<td>180</td>
<td>220</td>
<td>280</td>
<td>340</td>
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<td>Solenoid valve amount Set</td>
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<td>9</td>
<td>12</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Standard compressed air quantity l/min</td>
<td></td>
<td>85</td>
<td>140</td>
<td>170</td>
<td>200</td>
<td>225</td>
<td>450</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Air compressor horsepower Kw</td>
<td></td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>2.2</td>
<td>2.2</td>
<td>5.5</td>
<td>5.5</td>
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<tr>
<td>Static pressure (AQ) mmAq</td>
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<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Gross weight Kg</td>
<td></td>
<td>500</td>
<td>700</td>
<td>850</td>
<td>1100</td>
<td>1200</td>
<td>1600</td>
<td>1900</td>
<td></td>
</tr>
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</table>

RT type PCB – high pressure dust collector

RG type PCB – high pressure dust collector
BAG FILTER FACILITY

1. Structure and Principle
   High-efficiency membrane bag filter filters emission by sucking polluted gas into the bag filter for solid/gas separation. Particles are captured on filter surface; the frequency of the filter is controlled by a timer. Cleaning is done by shaking particles off the filter bag surface, which is enabled by injection of high-pressure air into the funnel. Dusts are collected into the barrel underneath for regular removal. Air processed through the filter is then released into the atmosphere via a suction fan.

2. Purpose
   For sites of drilling, shaping, grinding, particle conveyance, mixing, stirring, incineration, chemical, cement, lime, wood shaving, painting.

3. Features
   (1) Space saving: for the same size, the filter surface is several times more than that of conventional models. The filter is free-standing; no frames are required. It is also wear-resistant for longer usage life.
   (2) The surface has porous membrane for high screening efficiency to prevent dust from entering the filter for prolonged filter life. It is lighter, more resilient and more durable than conventional models.
   (3) Changing filter is simple and quick to shorten operation-halt time and in turn increases production capacity.

4. Specifications and Functions
   (1) Elastic filter head, excellent installation seal
   (2) Filter head is one-piece molded, which tightly attached to the bag
   (3) Pleated design offers optimum and even support and retains elasticity of filter fabric.
   (4) Wide-fold design allows effective particle shake-off.
   (5) Elastic pleated design enables effective flush-out function.
(6) The two sides are sealed with steel for effective protection of filters and support the tough base, as well as reinforcing the fastness of the filter bags.

(7) Aero dynamic exterior design optimizes air flow and maintain minimum pressure differentiation during filtering and flushing.

5. Product Photo
BAG FILTER FACILITY

1. Structure and Principle
   This system uses dispersion inertial impact, shielding, and gravity to achieve dust capturing. This filter facility employs high-pressure air to continuously flush out particles without halting up operation, offering high stability and screening efficiency.

2. Purpose
   For sites with processes such as grinding, loading/unloading, mixing, stirring, particle conveyance, dry oven, dissolve tank, pharmaceutical, chemical, cement, lime, wood, powder painting.

3. Features
   (1) 99.99% particle capture rate.
   (2) Instant shake-off by jetting, meaning constant pressure loss and marginal air fluctuation for high efficiency.
   (3) To solve the problems of different factory layout and space constraints, prefabricated models have been developed for easy installation to achieve minimum impact to ongoing works during installation.
   (4) Easy installation and maintenance.
PULSE AIR JET BAG FILTER

1. Structure and Principle
   Particle-carrying air enters the bag filter via the inlet, passing through a stopper; at this point, heavier powders settle first, while lighter powders attach to the filter evenly; the PLC then controls the electromagnetic valve to trigger the membrane valve for input of pressurized air, which passes the venturi tube to flush the filter by shaking off powders into the collection chute, whereas the clean air passes through the filter to be released by the fan.

2. Purpose
   Applicable for powder treatment and recycle at all types of factories.

3. Features
   (1) The entire facility is controlled by PLC for easy operation.
   (2) The venturi tube is specially designed to flush the filter with minimum pressure loss and large volume of air supply.
   (3) The filter bags are highly breathable with minimum wear and long usage life.
   (4) Filter change can be done from the top of the machine without having to enter the system. It is simple to remove and install for easy maintenance.

4. Specifications and Functions
   (2) Filter material: Polyester, FRP, Nomax, Teflon, Ryton, P-84, Nylon, PP, 90%Polyester + 10%Carbon Fiber, Acrylic.

5. Product Photo
   Pulse-Air-Jet Bag Filter
   Capacity: 5,000 m³/min.
CARTRIDGE DUST COLLECTOR, BAG HOUSE

1. Structure and Principle
   Utilize a specially designed “Jet-Deflector” cartridge filter to enhance dust release and reduce housing size. The fine dust will be fully collected when dust-laden air enters through the cartridge filter. There is a sedimentation chamber and flow distributor at the air inlet to separate large and heavy particles, ensuring a longer bag life.

2. Purpose
   For all kinds of dust need to be collected.

3. Features
   (1) Cartridge Filter Enlarges Filter Area by 7 Times.
   (2) Inside Jet Deflector Enhances Dust Release, No Dust Clogging.
   (3) Fine Separated Cartridge Pleats, No Dust held up.
   (4) Unity Of Filter with Jet Deflector and Venturi Tube, Easy for Installation and Maintenance.
   (5) Equipped with Sedimentation Chamber and Flow Distributor, Can Handle High Dust Laden Air and Large Particles.

4. Product Photo

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MOBILE DUST COLLECTOR

1. Structure and Principle
   The model easy and convenient beauty can move to the position that need to be collected pollution source at any time. And can fit extra inlet for more machines.

2. Purpose
   (1) Mobile design to collect dust at different pollution points.
   (2) Designed for all types of dry wood dust from all popular woodworking machines.

3. Features
   (1) Reduce toxic hazardous dust in the air at workplace.
   (2) Powerful motor with efficient fan.
   (3) Pleated filter with large filter area.
   (4) Vacuum gauge shows the air flow status.
   (5) Pleated filter and plastic dust bag protected by metal tank from damage. Prompt assembly and easy maintenance.
   (6) See through glass for checking the dust level in the dust bag.
   (7) Cleaning filter by turning the brush inside the filter housing

4. Product Photo

5. Specification and Functions

<table>
<thead>
<tr>
<th>Model No.</th>
<th>DC-102</th>
<th>DC-103</th>
<th>DC-105</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor</td>
<td>2 HP</td>
<td>3 HP</td>
<td>5 HP</td>
</tr>
<tr>
<td>Air volume (CFM)</td>
<td>26 M3/Hr (916 CFM)</td>
<td>32.2 M3/Hr (1136 CFM)</td>
<td>47.7 M3/Hr (1683 CFM)</td>
</tr>
<tr>
<td>Filter Area</td>
<td>4348 cm² (674 in²)</td>
<td>5809 cm² (900 in²)</td>
<td>8177 cm² (1267 in²)</td>
</tr>
<tr>
<td>Bag volume</td>
<td>0.09 M³ (3.2 ft³)</td>
<td>0.12 M³ (4.3 ft³)</td>
<td>0.16 M³ (5.76 ft³)</td>
</tr>
<tr>
<td>Sound Rate</td>
<td>53 dB(A)</td>
<td>67 dB(A)</td>
<td>82 dB(A)</td>
</tr>
<tr>
<td>Inlet Diameter</td>
<td>100 mm (4”) x 1</td>
<td>125 mm (6”) x 1 Or with extra inlet 100mm (4”) x 2</td>
<td>125 mm (6”) x 1 Or with extra inlet 100mm (4”) x 2</td>
</tr>
<tr>
<td>Overall Dimension</td>
<td>1220mmX506mmX1440mm</td>
<td>1232mmX540mmX1604mm</td>
<td>1400mmX621mmX1750mm</td>
</tr>
<tr>
<td>Net weight</td>
<td>95 Kg (209 lbs)</td>
<td>116 Kg (255 lbs)</td>
<td>136 Kg (300 lbs)</td>
</tr>
</tbody>
</table>
PULSE-CARTRIDGE FILTER HOUSE

1. Structure and Principle
Through pressure or suction, particle-carrying gas is sent from the pollution source to the system, and filtered clean air is then released into the atmosphere via suction equipment. Powders or ashes attached to the exterior of the filter tubes are shaken off by using the procedure controller; for which, the wash time is set to trigger the electromagnetic valve, which sends 5kg/cm² of compressed air instantly through the Venturi pipe and spray into the filter tube to cause shockwaves. The auto trigger-on interval of each electromagnetic valve can be set according to particle concentration and variety to achieve continuous operation.

2. Purpose
Asbestos, fertilizer, feed industry, PVC, rubber grinding, powder conveyance, powder grinding, mixing, sandblasting, ceramics, tiles, powder coating, leather, pigments, paper industry, cement, coal, plywood, wooden products, petrochemical raw materials.

3. Features
(1) Prefabricated design, simple structure.
(2) High screening efficiency, low pressure loss.
(3) Replacement of filter tubes can be carried out externally without requiring personnel entry into the system, offering simple and easy maintenance.
(4) Small equipment size, large treatment capacity, requiring large installation space.

4. Specifications and Functions
Material: the body is made of stainless steel or carbon steel.
Filter material: PE, Teflon, PP, Aramid, Polyamide, polyester.
(1) Wind volume: 5~1,000 m³/min/unit.
(2) Treatment temperature: max 100°C.
(3) Choices of body material and filter material to suit various needs.
### Specification:

<table>
<thead>
<tr>
<th>Model</th>
<th>Screen Surface (m²)</th>
<th>Tube Count</th>
<th>EM Valve Count</th>
<th>Horsepower (hp)</th>
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<tbody>
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<td>T-1</td>
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<td>1</td>
<td>0.5</td>
</tr>
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<td>T-4</td>
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<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>T-9</td>
<td>45</td>
<td>9</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>T-12</td>
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<td>4</td>
<td>5.5</td>
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<td>T-16</td>
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<tr>
<td>T-150</td>
<td>750</td>
<td>150</td>
<td>30</td>
<td>75</td>
</tr>
</tbody>
</table>

5. **Product photo**

![Product photo](image-url)
STATIC FILTER

1. Structure and Principle
This static filter employs the polarity theory of attraction between opposite electrodes and electromagnetic fields of two opposites electrodes created by imposed high pressure. Columbic force charges dust particles, which are sucked by wind to attach to the collection sheet and achieve the purpose of air purification.

The static filter can be low pressure or high pressure. In the design, the properties of dust and smoke must be taken into account, and, where necessary, a preliminary filter may be fitted at the inlet and a high-performance filter or deodorizer may be fitted at the outlet.

(1) Filter may be manually removed for cleaning.
(2) This equipment is fitted with an auto-cleanser.
(3) This equipment is fitted with a timed pounding system for pounding.

2. Purpose
The equipment may be used for treating powder dust, ashes, smoke ashes and smolder produced in the process of manufacturing.

3. Specifications and Functions
The equipment is made of SUS304 or SS400 grade materials.

Standard Equipment:

(1) Static filter housing.
(2) Support frame.
(3) Suspension system.
(4) High-polarization structure.
(5) Ash silo.
(6) Ash discharge system.
(7) DC HV power supply device (HV producer).
(8) HV switchgear.
(9) HV insulation.
(10) Spray wash system (or dust pound-off system).

4. Features

(1) Power supply for this equipment is in SCR format. It is equipped with voltage, current and frequency adjustment controls for easy operation.

(2) The control console employs a separation transformer to prevent stray signal from interfering with the electronic circuit.
(3) It is designed with an output detection circuit, which automatically cuts off power if no output voltage is detected after 10 seconds from startup.

(4) The auto voltage adjusting circuit is capable of detecting sparks. When sparks are detected, the voltage is reduced.

(5) The design of the multiple section sheet and pipe-type long-distance dust and smoke collection enables over 98% of efficiency.

(6) The equipment requires minimum power to operate and minimizes wind resistance.

(7) The distance between the collecting electrode and the discharge electrode is designed according to the physical properties of target dust particles to increase the efficiency of dust capture while reducing powder attachment to the discharge electrode.

(8) The airflow at the inlet is evenly distributed to reduce dust dispersion caused by uneven load.

5. Product Photo
WET STATIC REACTOR FACILITY

1. **Structure and Principle**
   This system applies DC to charge the electrode wire with negative high voltage and create an electromagnetic field between the discharge electrode and the grounding hub. It mainly utilizes anions to fuse with particle of pollutants to achieve filtering. Water is used for carrying away the pollutants collected by electrodes and sheets and maintain the reactor in optimal operating conditions.

2. **Purpose**
   Air pollution prevention for boiler, steel industry’s furnace, nonferrous refinery industry’s cement kiln, glass kiln, chemical engineering industry’s pigments, papermaking, painting, asphalt, DOP, incinerator, food industry, distillery, cogeneration plant, etc.

3. **Features**
   (1) High-efficiency, resistant to various particle properties.
   (2) No re-entrainment and bypass leakage; excellent for capturing fine particles.
   (3) Operating under dew point, small equipment, suitable for treating explosive, flammable particles.
   (4) Emission is frozen to under dew point into particles for charging and capturing to achieve the purpose of elimination.
   (5) Recovery solvent can be added to the spray water to remove gas pollutants.
   (6) Low breakdown rate, easy maintenance, high safety, low operating cost.
   (7) Equipped with demist function for steam collection.
   (8) Can be incorporated into scrubber for enhanced efficiency.
4. Specifications and Functions

(1) Discharge electrode: wire type, needle type, star type, cross type, fishbone type.

(2) Hub: plate, rectangular pipe, round pipe, beehive, bar screen.

(3) Nozzle: impact, cone, helix; cold water, hot water, steam, liquid alkali.

(4) Capable of continuous or intermittent flushing.

(5) Hot-air fan.

(6) Draw fan.

(7) Demister.

5. Product Photo
CONDUCTION WET SCRUBBER

1. **Structure and Principle**

   This system uses the original power from various air exhaust systems to treat waste gas and dust in pollutants. It has the function of sedimentation, collection, filtering, and dust removing.

2. **Features**

   1. The rear part of the exhaust does not need additional power supply.
   2. Independent gas outlet for individual pollution source; no back-flow or cross-contamination.
   3. Pressure loss is under 15mmAg.
   4. The air outlet of multi-set pollution source is available to build only one set of exhaust chimney.
   5. Suitable for use with an exhaust system pollution control for various circles.
   6. Easy to inspect; low cost.
   7. Saving energy cost.

3. **Specifications and Functions**

   Material quality: PP, PVC, SUS304, galvanize, SS400 depends on the waste spirit established rule.

4. **Product Photo**

   ![Product Photo](image-url)
NON-PUMP WET EXHAUST TREATMENT EQUIPMENT

1. Structure and Principle
   Non-Pump Wet Exhaust Treatment Equipment consists of a tank, gas induction stopper, spray neck, flow stirrer, dewater stopper, liquid surface adjuster, overflow surface adjuster, and discharge valve (electric, pneumatic or manual). This system can be further fitted with essential auxiliary equipment for pollutants with various physical properties. Gases containing dust are inducted into the system. As the induction stopper keeps a small channel from the liquid surface, the exhaust passes through the neck at high speed; the centrifugal force then causes considerable splashes, forming swirls, and the impact of massive moisture on the stopper produces collision to drive dust-carrying air to rise rapidly from the bottom to mix with liquid and flush up and down to derive extremely high filtering efficiency. After which, the purified air sputters with water droplets and, upon colliding on the dewater stopper, separates into air and water. The water is then completely captured and only the air is released. In the case of drastic gas flow fluctuation, the overflow adjuster of the water-level adjuster may be used to maintain the dust-gathering function.

2. Purpose
   This equipment processes water soluble (hydrophilic) gases, Liquid format micro-particles, Solid particles, and odors.

3. Features
   (1) The equipment is capable of processing high temperature and moisture containing gases.
   (2) Reasonably priced, this ideal gas and liquid mixture washing device offers excellent exhaust capturing, yielding over 95% capture rate for 3-5μ micro-particles.
   (3) The device requires no pump and relies on fan to drive gases through the passage and centrifugal force for designation of moisture; the spacious interior enables easy maintenance and inspection.
   (4) Small pressure loss (150mmAq), nearly no wear parts to save operating cost.
4. **Specifications and Functions**

(1) The body of the equipment is made to accommodate high-temperature gases, which is made of SUS 304, 316, 316L grade stainless steel, SS400 rustproof treaded and spray painted; Applicable for acidic, alkaline chemical exhausts, PP, PVE, PE.

(2) The filler material may be SUS304, PP, or PVC according to the exhaust’s physical properties.

5. **Product Photo**
FLUIDIZED BED SCRUBBER

1. **Structure and Principle**

Particle-carrying exhaust enters from the bottom of the tank, first and then passes through a gas disperser to accelerate flow speed for fluidizing the packing.

Nozzles spray water from top-down to enable gas and water to interact on the grate. The scrubber then utilizes the filler liquidation process to remove particles. The demister then eliminates the moisture content from the gas. After the process is completed, the clean air is then released in to the atmosphere. The treated wastewater is then channeled to the sediment tank or via other treatment for recycle use.

2. **Features**

   (1) Low initial setup cost, easy operation and maintenance.

   (2) Concurrently remove particle pollutants and other acidic, alkaline gases.

   (3) The gas disperser tubes may be replaced to adjust discharge volume and optimizes liquidation for maximum removal efficiency.

   (4) Capable of removing 95~99\% of 2 \( \mu \) m and larger particles.

   (5) More temperature resistant, capable of processing high-temperature gases.

3. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Gas</th>
<th>Molecular Formula</th>
<th>Solvent</th>
<th>Removal Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>HCl</td>
<td>H₂O</td>
<td>90 ~ 95%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NaOH</td>
<td>95 ~ 99%</td>
</tr>
<tr>
<td>Hydrofluoric acid</td>
<td>HF</td>
<td>H₂O</td>
<td>90 ~ 95%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NaOH</td>
<td>95 ~ 99%</td>
</tr>
<tr>
<td>Ammonia</td>
<td>NH₃</td>
<td>H₂O</td>
<td>90 ~ 95%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H₂SO₄</td>
<td>Over 99%</td>
</tr>
<tr>
<td>Cyanic acid</td>
<td>HCN</td>
<td>NaOH</td>
<td>90 ~ 98%</td>
</tr>
<tr>
<td>Sulfuric dioxide</td>
<td>SO₂</td>
<td>NaOH</td>
<td>Over 95 ~ 99%</td>
</tr>
<tr>
<td>Chlorine</td>
<td>Cl₂</td>
<td>NaOH</td>
<td>Over 95 ~ 99%</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>H₂S</td>
<td>NaOH</td>
<td>Over 95 ~ 99%</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>H₂SO₄</td>
<td>H₂O</td>
<td>Over 95 ~ 99%</td>
</tr>
<tr>
<td>Chromic acid</td>
<td>CrO₃</td>
<td>H₂O</td>
<td>95 ~ 99%</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>NaOH</td>
<td>H₂O</td>
<td>95 ~ 99%</td>
</tr>
</tbody>
</table>

PS: Statistics based on multiple gases of 100 ppm concentration.

4. **Product Photo**

大毅技術工程股份有限公司

DIAMOND TECHNICAL & TRADING CORP.

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CYCLONE SCRUBBER

1. Structure and Principle

The system employs centrifugal force of inlet gas to achieve mixing, blending, absorption, and adsorption with washing liquid, to remove pollutants from exhaust gases.

2. Purpose

For absorption of hazardous gas, removal of fume and particle, gas cooling or pre-treatment.

3. Features

(1) Employ centrifugal force of inlet gas flow offering excellent air-to-liquid contact efficiency.

(2) Very simple structure, low cost and easy maintenance.

(3) Average 90% pollutant removal efficiency, 100% heat exchange efficiency.

4. Product Photo
ANTI-EXPLOSION BUBBLE FILTER

1. Structure and Principle
   (1) This equipment utilizes washing and centrifugal force to capture particles in the dust-carrying air. When air passes through the S tank and mixed with water, the mixture is then sucked out by the exhaust fan.
   (2) The equipment is designed with a safety device and engineered against explosion.

2. Purpose
   (1) Foundries: particle filtering for aluminum alloy and magnesium alloy casting.
   (2) Petrochemical plants: pharmaceutical manufacturing.

3. Features
   (1) Low operating cost.
   (2) Minimum pressure loss brought by air flow fluctuation.
   (3) Simple structure makes it easy for inspection and maintenance.

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>BDC-3N</th>
<th>BDC-5N</th>
<th>BDC-7N</th>
<th>BDC-50N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>220V 50/60Hz</td>
<td>220V 50/60Hz</td>
<td>220V 50/60Hz</td>
<td>220V 50/60Hz</td>
</tr>
<tr>
<td>Fan Motor</td>
<td>2.2kw×2P</td>
<td>3.7kw×2P</td>
<td>5.5kw×2P</td>
<td>37kw×2P</td>
</tr>
<tr>
<td>Wind Volume (m³/min)</td>
<td>30</td>
<td>50</td>
<td>75</td>
<td>500</td>
</tr>
<tr>
<td>Static Pressure (pa)</td>
<td>2,450</td>
<td>2,450</td>
<td>2,450</td>
<td>2,450</td>
</tr>
<tr>
<td>Tank Capacity (L)</td>
<td>900</td>
<td>1,000</td>
<td>1,400</td>
<td>5,500</td>
</tr>
<tr>
<td>Outlet No</td>
<td>1 outlet</td>
<td>1 outlet</td>
<td>2 outlets</td>
<td>11 outlets</td>
</tr>
<tr>
<td>Pressure Release Outlet No.</td>
<td>3 outlets</td>
<td>3 outlets</td>
<td>3 outlets</td>
<td>11 outlets</td>
</tr>
<tr>
<td>Equipment Dimension</td>
<td>A (mm)</td>
<td>800</td>
<td>1,000</td>
<td>1,400</td>
</tr>
<tr>
<td></td>
<td>B (mm)</td>
<td>613</td>
<td>689</td>
<td>789</td>
</tr>
<tr>
<td></td>
<td>C (mm)</td>
<td>Ø195</td>
<td>Ø250</td>
<td>Ø292</td>
</tr>
</tbody>
</table>
SPRAY-PAINT TREATMENT FACILITY

1. Structure and Principle
Arch water-curtain is designed to bolster induction and filter efficiency. It draws floating particles produced in paint-spraying into a filter chamber through suction to separate the particles from air and achieve the desired standard of air purification.

2. Purpose
Eliminate powder pollution produced in the process of paint-spraying to deter pollutants from attaching to objects of work

3. Features
(1) Manpower saving; productivity enhancing; increase production capacity.
(2) Enhance product aesthetic value.
(3) Special water induction design and swirl filter chamber.
(4) Keep factory neat and pleasant, create comfortable work environment.
(5) Maintain constant humidity, prevent accidents caused by volatile materials.
(6) Designed for capturing powder dust and organic solvent produced in spray-painting; expand water-curtain and reinforce air supply device to deter loose powder from adhering on work objects for higher product quality.
**WET SCRUBBER**

1. **Structure and Principle**
   Waste gas goes through the closed liquid layer, enabling thorough gas/liquid contact. Liquid affinity is then used to absorb and collect waste gas to achieve cleansing. This system also use irregular substance to increase time and area of gas/liquid contact for maximum effect.

2. **Purpose**
   Gas absorb, neutralize, rid of dirt and odor, and clarify.

3. **Features**
   - (1) Use P.P., PVC to manufacture, the age is longer.
   - (2) A consumption of liquid is less.
   - (3) Collected effect is better.
   - (4) Consumption is not obstructing.

4. **Specifications and Functions**
   - (1) Capacity: 20~□1,000m³/min.
   - (2) Dimension: □0.6~□4m.

5. **Product Photo**

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**GOLDEN FLAG VENTILATION IND CO., LTD**

高幡通風工程股份有限公司

台中市南屯路二段 860 巷 37 號  No. 37, Lane 860, Nantun Rd., Sec. 2, Tachang City, Taiwan
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E-mail: fgan8928 @ms37.hinet.net  http://www.goldengroups.com
CENTRIFUGAL VENTURI SCRUBBER

1. **Structure and Principle**
The special mist area in the interior provides a large contact surface and longer contact time. The gas absorption rate is greater than a venturi scrubber. Its efficiency is closer to regular filler reactors. For treatment of indissoluble powders in flue gas or where emulsion or crystallization may occur, centrifuge is the best solution, as the interior has no parts to block air flow, nor clogging/filling in the nozzles. At the same time, the swirl keep the tank interior clean through continuous washing. When flue gas carries dust powders or crystals that standard filler scrubber cannot be employed, centrifugal venture washing tower is an effective solution. Using the centrifugal venture washing tower to treat flue gas produced from boilers or incinerators is an exemplary illustration, as the flue gas simultaneously carries smoke and chemical gases.

2. **Purpose**
Fine mist is produced by centrifugal contact and reacts with flue gas in opposite direction, which enables more effective dust collection than other types of wet scrubber.

3. **Features**
(1) Lower pressure loss.
(2) Less water consumption.
(3) Less space requirement.
(4) Lower installation cost.
(5) Lower maintenance.

4. **Specifications and Functions**

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>H (mm)</th>
<th>D (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0111</td>
<td>1,800</td>
<td>580</td>
<td>380</td>
</tr>
<tr>
<td>0206</td>
<td>2,000</td>
<td>760</td>
<td>500</td>
</tr>
<tr>
<td>0302</td>
<td>2,400</td>
<td>965</td>
<td>620</td>
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<td>0310</td>
<td>2,650</td>
<td>1,170</td>
<td>850</td>
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<td>0405</td>
<td>2,850</td>
<td>1,350</td>
<td>1,210</td>
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<td>0501</td>
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</tr>
<tr>
<td>0509</td>
<td>3,700</td>
<td>1,750</td>
<td>1,800</td>
</tr>
<tr>
<td>0604</td>
<td>4,050</td>
<td>1,930</td>
<td>2,050</td>
</tr>
<tr>
<td>0700</td>
<td>4,500</td>
<td>2,140</td>
<td>2,500</td>
</tr>
<tr>
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<td>4,800</td>
<td>2,310</td>
<td>2,850</td>
</tr>
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<td>0803</td>
<td>5,040</td>
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<td>2,720</td>
<td>3,800</td>
</tr>
<tr>
<td>0906</td>
<td>5,800</td>
<td>2,900</td>
<td>4,200</td>
</tr>
<tr>
<td>1002</td>
<td>6,250</td>
<td>3,100</td>
<td>4,780</td>
</tr>
<tr>
<td>1010</td>
<td>6,400</td>
<td>3,300</td>
<td>5,320</td>
</tr>
<tr>
<td>1105</td>
<td>6,600</td>
<td>3,480</td>
<td>6,200</td>
</tr>
</tbody>
</table>

5. **Product Photo**

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貫能技術工程有限公司

FAIR TECHNICAL ENGINEERING CO., LTD
台北市中正區和平西路一段 80 號 11 樓之 5 11-5FL, No. 80, Sec. 1, Ho Ping W. RD. Taipei, Taiwan,
TEL : +886-2-2367-7070 FAX : +886-2-2365-9024
E-mail : fair.tech@msa.hinet.net http://www.fairtech.url.tw

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VENTURI SCRUBBER

1. **Structure and Principle**
   Exhaust carrying sulfur oxides and powders enter the venturi scrubber to interact with the recovery solvent. When passing through the neck, the section surface constricts and the high velocity gas pressurizes the solvent into mist to for an inertial impact for removal of the particles.

2. **Purpose**
   Applicable for treatment of high-temperature exhaust

3. **Features**
   (1) High filtration efficiency.
   (2) Recovery solvent can be recycled to minimize water consumption.

4. **Specifications and Functions**
   Can be customized according to exhaust properties or client requirement.
   Material: Stainless steel or FRP.

5. **Product Photo**
MULTI-CYCLONE DUST COLLECTOR

1. Structure and Principle
Operation of the multi-cyclone tube element is similar to that of standard cyclones except for higher collection efficiency brought by increased centrifugal force action and optimum tube diameter.
Multi-cyclone duct collector occupies less space than standard cyclones, especially when handling large air volume; the height of multi-cyclone is lower than standard cyclone.
Pressure drop of a multi-cyclone is less than a standard cyclone with the same collecting efficiency. Lower fan pressure and lower power consumption is required.
Modular housing designed with variable inlets and outlets makes this multi-cyclone ideal for new installation or as an add-on to existing systems.

2. Purpose
(2) Chemical Industries: Grinders, Mixers, Conveyors, Silo Inlet, Bag Filling.
(3) Machinery Industries: Grinder, Lathe, Polishing.
(5) Fertilizer Industries: Silo Inlet, Conveyor, Mixer, Bag Filling.
(6) Steel Industries, Foundries, Mining Industries, Cement Plants, ceramic Industries.

3. Features
(1) Minimum maintenance, no moving parts
(2) Compact design saves valuable space and is easy to install.
(3) Versatile assembly according to requirements
(4) Wide application throughout the plant.
4. Specifications and Functions

<table>
<thead>
<tr>
<th>Specification</th>
<th>Model No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Inlet Dimension</th>
<th>Exit Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMC-22</td>
<td>950</td>
<td>950</td>
<td>1,850</td>
<td>560</td>
<td>950×80</td>
<td></td>
<td>300×150</td>
</tr>
<tr>
<td>FMC-32</td>
<td>950</td>
<td>1,325</td>
<td>1,850</td>
<td>980</td>
<td>950×75</td>
<td></td>
<td>300×220</td>
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<td>FMC-33</td>
<td>1,325</td>
<td>1,325</td>
<td>2,000</td>
<td>980</td>
<td>1,325×120</td>
<td></td>
<td>400×250</td>
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<tr>
<td>FMC-43</td>
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<td>1,400</td>
<td>1,325×150</td>
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<td>FMC-44</td>
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<td>2,150</td>
<td>1,400</td>
<td>1,700×175</td>
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<td>600×300</td>
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<tr>
<td>FMC-54</td>
<td>1,700</td>
<td>2,075</td>
<td>2,150</td>
<td>1,800</td>
<td>1,700×200</td>
<td></td>
<td>600×375</td>
</tr>
<tr>
<td>FMC-55</td>
<td>2,075</td>
<td>2,075</td>
<td>2,300</td>
<td>1,800</td>
<td>2,075×220</td>
<td></td>
<td>700×400</td>
</tr>
<tr>
<td>FMC-65</td>
<td>2,075</td>
<td>2,450</td>
<td>2,300</td>
<td>2,200</td>
<td>2,075×250</td>
<td></td>
<td>800×550</td>
</tr>
<tr>
<td>FMC-66</td>
<td>2,450</td>
<td>2,450</td>
<td>2,450</td>
<td>2,200</td>
<td>2,450×260</td>
<td></td>
<td>900×450</td>
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<tr>
<td>FMC-76</td>
<td>2,450</td>
<td>2,825</td>
<td>2,450</td>
<td>2,600（1,400×2）</td>
<td>2,450×280</td>
<td></td>
<td>900×500</td>
</tr>
<tr>
<td>FMC-77</td>
<td>2,825</td>
<td>2,825</td>
<td>2,600（1,400×2）</td>
<td>2,825×300</td>
<td></td>
<td>1,100×500</td>
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<tr>
<td>FMC-87</td>
<td>2,825</td>
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<td>2,600（1,800×2）</td>
<td>2,825×330</td>
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<tr>
<td>FMC-88</td>
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<td>2,750（1,800×2）</td>
<td>3,200×350</td>
<td></td>
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<tr>
<td>FMC-98</td>
<td>3,200</td>
<td>3,575</td>
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<td>3,200×375</td>
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<tr>
<td>FMC-99</td>
<td>3,575</td>
<td>3,575</td>
<td>2,900（2,200×2）</td>
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<td>FMC-1009</td>
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<td>3,950</td>
<td>2,900（2,600×2）</td>
<td>3,575×420</td>
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<td>FMC-1010</td>
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<td>3,950</td>
<td>3,050</td>
<td>3,900（2600×2）</td>
<td>3,950×450</td>
<td></td>
<td>1,400×800</td>
</tr>
</tbody>
</table>
ELECTROSTATIC TYPE OIL MIST ELIMINATOR

1. Structure and Principle

By making use of the principle of attraction between positive and negative electrodes, this system creates an electromagnetic field to collect oil mist or ionized granules. This system can be used to remedy problems caused by pollution and achieve the purpose of air purification. Oil mist eliminating rate can reach up to 95~99%.

2. Purpose

Palm oil refining industry, dyeing industry, oil production, glass industry, paper pulp, incinerator, food, paper-making, chemical industry, heat treatment processing industry.

3. Specifications and Functions

Material quality: SUS304, SUS304L, SUS316, SUS316L galvanize the material quality.

Processes waste spirit: 10~2,000cmm.
OIL MIST ELIMINATOR

1. Structure and Principle
   After oil mist enters into the filtering equipment, it then goes through the primary, intermediate, and high performance filtering layers for filtering for separation of different substance. As soon as the warning indicator is activated by the pressure gage at the filtering net, the filtering element is required for replacement.

2. Purpose
   Screw, Steel rolling, metallic surface processing, chemical industry, and electronic industry.

3. Features
   Varied Processing for constant temperature oil mist.

4. Specifications and Functions
   10~2,000 cmm.

5. Product Photo
   ![Product Photo](image-url)
KITCHEN OIL MIST COLLECTOR

1. Structure and Principle
The wet ESP collector is structured to be an exhaust hood, with inside needle discharge electrodes and tube collecting electrodes. The very strong charging field will forces all the oil mist particles to move toward collecting electrodes and to be collected. The surface of collection tubes is wetted by a pump spray to avoid oil particles from adhering, and maintain high operation efficiency.

2. Purpose
For all kinds of cooking, restaurant exhaust

3. Features
(1) Special hood-typed design, no additional hood required, save the space and installation cost.
(2) Stainless needle discharge electrodes for maximum electric field.
(3) Stainless tube collecting electrodes for maximum collection surface.
(4) Temperature resistant, easy maintenance.
(5) Self-cleaning auto spray system.
(6) Minimize the oil condensation in duct.

4. Product Photo

台純公害處理工程股份有限公司
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15F-4, No. 258, Lian-Cheng Rd., Chung-Ho District, New Taipei City, Taiwan
TEL : +886-2-8227-1299   FAX : +886-2-8227-1289   E-mail : teec@teec.com.tw   http://www.teec.com.tw
ELECTROSTATIC PRECIPITATOR

1. Structure and Principle
Electrostatic precipitator applies the two opposite electric fields generated from high voltage to charge dust particles passing through it under the action of Column force, the charged particles then will move the electrode with opposite polarity and attach to the electrode plate and removed out from the airflow.

2. Purpose
When volatile or cracked oil forms oil fume, smoke or dust pollutant in industrial or cooking process and they pass through the electrostatic type smoke handling equipment (precipitator), over 90% or the pollutants can be captured effectively.

3. Features
Normal oil fog, smoke or dust particle dimensions are distributed within the range of 0.01~10μm; the electrostatic type smoke handling equipment (precipitator) can perform over 90% efficiency in pollutant particles capture. Since this equipment applies module design, able to be assembled by cascade or parallel combination, it thus can be applied to clean up flue gas under various airflows and concentrations.

4. Specifications and Functions
(1) Particulates removing rate is above 95% (electrostatic precipitator).
(2) Scent filtering (scent-removing stone and active carbon).
(3) Low noise generated (noise protection facility).

5. Product Photo
OIL MIST CLEANING SYSTEM

1. **Structure and Principle**
   
   (1) Compact structure offers small but effective processing.
   
   (2) Removable housing for easy maintenance.
   
   (3) Gap between the cylinder and hub is precision calculated for optimal filtering efficiency via centrifugal function.
   
   (4) Curve-blade design improves wind volume.
   
   (5) Cone inlet design elevates collection efficacy.

2. **Purpose**
   
   (1) For maintain the clean environment.
   
   (2) Suitable for all types of machine tools.
   
   (3) Recycled fuel for reuse.

3. **Features**
   
   The small, compact, effective construction. The equipment operates quietly, and is equipped with advanced filter function and effective motor that reduces operating cost and creates preferred working environment.

4. **Product Photo**

5. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Model</th>
<th>Wind volume (m³/hr)</th>
<th>Voltage</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX2000</td>
<td>425@50Hz / 500@60Hz</td>
<td>0.55kw, 220/380V, 50/60Hz</td>
<td>16</td>
</tr>
<tr>
<td>FX3000</td>
<td>850@50Hz / 950@60Hz</td>
<td>1.5kw, 220/380V, 50/60Hz</td>
<td>17</td>
</tr>
<tr>
<td>FX4000</td>
<td>1250@50Hz / 1500@60Hz</td>
<td>1.5kw, 220/380V, 50/60Hz</td>
<td>23</td>
</tr>
<tr>
<td>FX5000</td>
<td>1675@50Hz / 2000@60Hz</td>
<td>2.2kw, 220/380V, 50/60Hz</td>
<td>29</td>
</tr>
<tr>
<td>FX6000</td>
<td>2000@50Hz / 2400@60Hz</td>
<td>2.2kw, 220/380V, 50/60Hz</td>
<td>34</td>
</tr>
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<td>FX7000</td>
<td>2700@50Hz</td>
<td>2.2kw, 220/380V, 60Hz</td>
<td>34</td>
</tr>
</tbody>
</table>

All models may be installed on machinery either horizontally or vertically, or on the floor with support.

光騰工業科技股份有限公司

EASTON ENGINEERING INTERNATIONAL CORP.

新北市三重區新路五段 609 巷 14 號 7 樓之 9
7F-9, No. 14, Lane 609, Sec. 5, Chung Hsin Rd., San Chung District, New Taipei City, Taiwan
TEL : +886-2-2999-5763 FAX : +886-2-2999-5764
E-mail : easton99@ms21.hinet.net http://www.easton-eng.com.tw
KITCHEN OIL MIST COLLECTOR

1. Structure and Principles

This system utilizes a preliminary filter to filter out larger oil particles. Preliminarily filtered oil particles are then put through a molybdenum electrode board and turned into negatively-charged particles through the High Pressure Static Field principle. After which, the oil particles are ten absorbed by a positively-charged electrode board to achieve high-efficiency oil-fume removal.

2. Purpose

Oil-fume process for restaurants, hotels, family kitchens.

3. Features

(1) Various volumes and types are available to suit various types of stoves.
(2) High-efficiency charge, small, and energy efficient.
(3) Designed with auto cutoff safety circuit, which interrupts the electricity flow automatically when a short-circuit occurs.
(4) Small and easy to install.
(5) Easy to clean and maintain; saves costs.

4. Product Photo

![Product Photo]

封固企業股份有限公司 FENG GUH ENTERPRISE CO., LTD
高雄市前鎮區新衙路 286-9 號 4 樓之 1 4F-1, No. 286-9, Hsin-Ya Rd., Kaohsiung, Taiwan
TEL : +886-7-822-2918 FAX : +886-7-812-3938
E-mail : fengguh@ms8.hinet.net http : //www.feng-guh.com.tw
ELECTROSTATIC PRECIPITATOR

1. Structure and Principle
   ESP is the use of charge principle that opposites attract, and the applied pressure and the formation of two polar opposite of the electric field, under the action of the Coulomb force, so that soot particles after the charge sheet to the movement of dust attached to the dust, and thus to achieve clean the purpose of the air.

2. Purpose
   Effective treatment of industrial, catering and domestic kitchen smoke pollution generated through efficient processing purified before discharge. Business owners to solve problems.

3. Features
   (1) High efficiency air pollution control.
   (2) Design and installation of flexible.
   (3) Treatment to follow-site design.
   (4) Meet the highest standards of environmental protection.
   (5) No secondary pollution.
   (6) Using less supplies and reduce energy consumption.

4. Specifications and Functions
   Disposal sites according to the amount of wind may be, to do a combination of fixed models (unlimited portfolio required)

5. Product Photo

清三環境科技股份有限公司
CHING SAN ENVIRONMENT TECHNOLOGY CO., LTD.
新北市泰山區中山路三段 91 巷 2 號
No. 2, Lane 91, Sec. 3, Zhong Shan Rd., Taishan Shang District, New Taipei City, Taiwan
TEL : +886-2-2906-3338   Fax : +886-2-2901-5338   E-mail : tiger.go@msa.hinet.net   http://www.lcst.com.tw
COMMERCIAL-GRADE TUBULAR STATIC VENTILATOR

1. Structure and Principle
   Static filter is principally built on attraction between opposite electrodes: AC high voltage is rectified to create a static magnetic field positive and negative electrodes. Smoke is sent to the magnetic field, and ionized by positive and negative electrodes for μm smoke to attach to tube wall in forming a liquid layer, which then flows down to the chute for collection. The process solves the problem of grease smoke, and contributes to environmental protection.

2. Purpose
   Prevent public hazard and environment pollution; enhance working environment quality; recycle valuable substances

3. Features
   It is designed to eliminate grease smoke produced in commercial kitchens according to specific requirement. The device is engineered for high static strength and low power consumption with 99.9% elimination efficiency. It is a complete solution for air pollution and recycling.
PIPE TYPE ELECTRO-STATIC PRECIPITATOR

1. **Structure and Principle**
   Static filter is principally built on attraction between opposite electrodes: AC high voltage is rectified to create a static magnetic field positive and negative electrodes. Smoke is sent to the magnetic field, and ionized by positive and negative electrodes for μm smoke to attach to tube wall in forming a liquid layer, which then flows down to the chute for collection. The process solves the problem of grease smoke, and contributes to environmental protection.

2. **Purpose**
   Prevent public hazard and environment pollution; enhance working environment quality; recycle valuable substances

3. **Features**
   For screening off particles, and removal of smoke, grease mist, acid mist of various industries
HIGH-PERFORMANCE STATIC GREASE SMOKE PROCESSOR

1. Structure and Principle
   This static grease smoke filter employs the physical property of charging particles to create diameter swelling and achieve the propose of filtering. Grease smoke is shrouded by the shield and sucked through the windpipe via a negative pressure crated by the fan at a speed of 5-8M/S in the chamber. The front mesh filter evenly channels the flow to the separation area. The first electrode is pressurized to inducer the wire to fizz and charge the exhaust particles, which in motion attaches to the second polarized sheet of the opposite current. With excellent capture efficiency, grease deposit accumulates and drops into the collection chute. The capturing plate should be cleaned very 1~5 weeks pending upon frequency of use.

2. Purpose
   Bolster filtration of hot air and grease smoke produced in restaurant cooking; prevent grease captured on the shield from dripping back into food; improve air quality in work environment; reduce accident, occupational hazard and fire occurrence; enhance work environment safety and hygiene; reduce machine and factory cleaning cost; increase work efficiency

3. Features
   (1) Available in mono- and multi-section plate, and varied pipe lengths to suit different needs; filtration efficiency over 98%.
   (2) Low power consumption, low pressure loss from resistance; spray-cleaner can be added for different models to save labor costs.
   (3) The operate/control system can be designed in PNP or SCR. It is equipped with stable voltage, and current; frequency adjustment control; simple operation.
4. Specifications and Functions

(1) Machine and polarized wires, plates can be made of SS400, aluminum plate, argon plate, SUS304, SUS316 stainless steel. Models available in mono, multi-section sheets and varied pipe lengths.

(2) For specification, there are manual and auto-clean polarized plates.

(3) Standard models’ capacity: 50-1,000 cmm.

(4) Industrial models’ capacity: 50-5,000 cmm.

5. Product Photo
VACUUM DUST COLLECTOR SYSTEM

1. Structure and Principle
Specially designed for PC Board Drill and Router machine. This central vacuum dust collector is equipped with:
(1) Vacuum piping with static pressure control.
(2) Pressure-resist cartridge dust collector.
(3) Double flap dumping valves.
(4) Low noise vacuum blower. Auto control, anti-static, continuous dust discharge for 24 hrs/day operation.

2. Purpose
(1) Vacuum dust collector for PCB’ drill, router, and cutting process.
(2) Central vacuum dust collector for other processes.

3. Features
(1) Well piping designed, good flow distribution, no clogging.
(2) Accurate static pressure control extends equipment’ life.
(3) Available for central control of multi-exhaust.
(4) High efficiency “Jet Amp Cartridge Filter” enlarges filtering area and enhances dust release.
(5) Compact design, save space.
(6) Easy installation and maintenance.

4. Product Photo

台華公害處理工程股份有限公司
TAIWAN ENVIRONMENTAL ENGINEERING CO., LTD.
新北市中和區連城路258號15樓之4
15F-4, No. 258, Lian-Cheng Rd., Chung-Ho District, New Taipei City, Taiwan
TEL: +886-2-8227-1299  FAX: +886-2-8227-1289  E-mail: teec@teec.com.tw  http://www.teec.com.tw
WET SCRUBBER

1. Structure and Principle
Waste gas goes through the down-below scrubber to enable absorption in the reversing direction to achieve the purpose of neutralizing. After which, the gas is separated into gas and liquid. Purified gas is then discharged into the atmosphere. The cycle liquid can added with an auto chemical supply System for recycled use to minimize the problem of water pollution.

2. Purpose
Chemical engineering/electroplating industry and improvement on all waste gas and oil dust with acid and alkaline, and reducing the odor production.

3. Features
(1) May coordinate overall factory planning to design a system for the needed process volume.
(2) Simple structure; low breakdown rate, easy maintenance.
(3) Low setup cost and low service cost.
(4) Available in the single stage or the multistage type chemical absorption designs.
(5) The process chemical can be recycled and reused to saves water and minimize wastewater discharge.
(6) Completely automated control, does not need the personnel attention.

4. Specifications and Functions
(1) Material quality: SUS304, SUS316, PP, FRP, PVC, galvanize, SS400... And so on.
(2) Specification varies according to the field operation environment and the nature of pollutants.

5. Product Photo
WET PACKING REACTOR

1. Structure and Principle
   Wet filler reactors are widely used for cleaning hydrophilic exhausts; the only recover solvent required is easily-accessible water, which may also be recycled. These features make the system the most reasonably priced and easiest to operate and maintain among all environmental protection equipments. It incurs hardly any cost for wear parts.
   This equipment consists of a tank unit, circulation tank, circulation pump, filler, high-pressure nozzle and demister, and where necessary suitable chemical may be added according to the exhaust’s physical properties to enhance treatment efficiency.

2. Purpose
   (1) Soluble (hydrophilic) gases.
   (2) Liquid particles.
   (3) Solid particles.
   (4) Odors.

3. Features
   (1) The equipment is capable of processing high-temperature and water-containing gases.
   (2) It is capable of minimizing explosion from overtly dry state or flammable dust gases.
   (3) High wetting capability
   (4) The equipment’s own pressure loss is lower than 50mmAq that greatly slash the initial setup cost of suction fan.
   (5) Large-volume nozzle prevents blockage that can affect treatment efficiency.
   (6) The circulation tank is designed with two-section filter to reduce impact on the pump.
   (7) Filler and its volume are selected according to industry and exhaust properties to bolster treatment efficiency and reduce initial setup costs.
   (8) The discharge end is fitted with a gas/liquid separator capable of eliminating over 95% of water droplets over 10 μ to reduce water circulation loss.

Specifications and Functions
   (1) Reactor Material : For high-temperature gases, the material may be:SUS304, 316, 316L grade stainless steel、SS400 rustproof treated and spray painted.
   (2) Filler material may be SUS304, PP or PVC according to exhaust properties.

Product Photo

千增股份有限公司  CHIAN TZENG CO., LTD.
桃園市龜山鄉區鼎一街 78 號 1樓 1F, No.78, Chazhuan 1st St., Guishan Dist., Taoyuan City, Taiwan
TEL: +886-3-359-4725  FAX: +886-3-359-4727
E-mail: Jeen.fong@msa.hinet.net  http://www.jeenfong.com.tw
TOXIC GAS TREATMENT EQUIPMENT

1. **Structure and Principle**
   When the sensor system detects toxic gas leak, it triggers off the alarm and automatically activates the fan and circulation pump to suck the toxic gas via the inlet and pipeline into the first section of the Venturi scrubber for neutralization by solvent. The neutralized toxic gas is then channeled to the second section of packed bed scrubber for further solvent neutralization. Clean air produced by the treatment is then released into the atmosphere. The equipment is designed for two-stage operation for direct release. The unit mainly consists of the following facilities:

   (1) Venturi scrubber (can be changed to packed bed type or other equipment for different requirements)
   (2) Packed bed scrubber.
   (3) Demister.
   (4) Solvent circulation pump.
   (5) Ventilation fan and circulation pump.
   (6) Toxic gas sensor system.

2. **Purpose**
   (1) Neutralization equipment for chlorine processing facilities.
   (2) Detoxification system for other toxic gases.
   (3) Treatment of other acidic, alkaline exhausts.

3. **Features**
   (1) The facilities may be altered to suit requirement of treatments for particular toxic gas to increase treatment efficiency and reduce cost.
   (2) The tank body is one-piece FRP, chemical resistant, solid, durable, safe and easy to maintain.
   (3) Automatic control ensures safety (may be switched to manual)
   (4) High removal rate, easy operation and maintenance.
4. Specifications and Functions

Material: FRP

<table>
<thead>
<tr>
<th>Gas</th>
<th>Molecular Formula</th>
<th>Solvent</th>
<th>Removal Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>HCl</td>
<td>H₂O</td>
<td>90 ~ 95%</td>
</tr>
<tr>
<td>Hydrofluoric acid</td>
<td>HF</td>
<td>H₂O</td>
<td>90 ~ 95%</td>
</tr>
<tr>
<td>Ammonia</td>
<td>NH₃</td>
<td>H₂O</td>
<td>90 ~ 95%</td>
</tr>
<tr>
<td>Cyanic acid</td>
<td>HCN</td>
<td>NaOH</td>
<td>Over 99%</td>
</tr>
<tr>
<td>Sulfuric dioxide</td>
<td>SO₂</td>
<td>NaOH</td>
<td>95 ~ 99%</td>
</tr>
<tr>
<td>Chlorine</td>
<td>Cl₂</td>
<td>NaOH</td>
<td>95 ~ 99.9%</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>H₂S</td>
<td>NaOH</td>
<td>Over 95-99%</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>H₂SO₄</td>
<td>H₂O</td>
<td>95 ~ 99%</td>
</tr>
<tr>
<td>Chromic acid</td>
<td>CrO₃</td>
<td>H₂O</td>
<td>95 ~ 99%</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>NaOH</td>
<td>H₂O</td>
<td>95 ~ 99%</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>HNO₃</td>
<td>H₂O</td>
<td>70 ~ 90%</td>
</tr>
</tbody>
</table>

The table is based on multiple gases of 100ppm concentration (can be designed according to client requirement).

5. Product Photo
WET SCRUBBER

1. Structure and Principle
   Waste gas flows through the scrubber and contacts with liquid to react. Then, a demister is used to remove moisture in the treated gas. Finally, the clean gas is discharged from the stack to the atmosphere.

2. Purpose
   (1) Treatment of waste gas from leachate storage tank in landfill sites.
   (2) Deodorizing for wastewater treatment plants.
   (3) Flue gas treatment for MSW and industrial waste incinerator.
   (4) Toxic gases such as H₂S, SOₓ, NOₓ, HCl, NH₃, Cl₂, HF..etc.

3. Features
   (1) Adopting packing materials with high absorption efficiency.
   (2) Recycling absorbent and significantly reducing the volume of wastewater.
   (3) Optimizing liquid / gas contact with low pressure drop.

4. Product Photo

5. Award (Certified) Items
   Industrial Development Bureau of MOEA certified the product for environmental protection quality standard in 1997.
HORIZONTAL SCRUBBER

1. **Structure and Principle**
   This facility is a horizontal cross-flow type scrubber: the pump sprinkles solvent top-down to the packing; the gas passes horizontally into the filler tank at a 90° angle to the solvent flow. The two elements meet in the filler layer and trigger a chemical reaction. The treated gas then passes the demister to remove its moisture content; the cleaned air is then release into the atmosphere. The reacted solvent then passes through the pH regulator for adjustment and then is recycled for repeated use to minimize wastewater production.

2. **Purpose**
   (1) Exhaust treatment of electronic and semiconductor plants.
   (2) Exhaust treatment of metal surface treatment plants.
   (3) Exhaust deodorization of sewer treatment.
   (4) Exhaust deodorization of incineration plant refuse pit.
   (5) Treatment of various toxic gases including H₂S, NH₃, SOₓ, NOₓ, HCl, Cl₂, HF, and deodorization.

3. **Features**
   (1) Its horizontal setup provides lower tank height for easy installation at building rooftop or indoor, where ceiling height limits the spaces.
   (2) The facility has high flexibility; it can be designed with single or multiple sections.
   (3) Excellent elimination efficiency, easy to operate and maintain.
   (4) The recyclable solvent design enables significant wastewater reduction.
   (5) Optimal gas/liquid contact, minimum pressure loss.
   (6) Fully automated operation and control requires no person.

4. **Specifications and Functions**
   (1) Material: FRP, PP, PVC, PVC+FRP, carbon steel or stainless steel.
   (2) Size: Can be customized according to exhaust physical properties or client requirement.

5. **Product Photo**

大毅技術工程股份有限公司
DIAMOND TECHNICAL & TRADING CORP.
新北市新莊區五權一路1號8樓之5 8F-5, No. 1, Wu Chun First Rd, Hsin-Chuang District, New Taipei City, Taiwan
TEL: +886-2-2299-0620  FAX: +886-2-2299-2261
E-mail: diamond6@ms22.hinet.net  http://www.diamondtech.com.tw
VERTICAL SCRUBBER

1. Structure and Principle
   This treatment equipment is a circulatory scrubber: exhaust enters from the bottom, and the cleaned gas exists from the top; the solvent is sprayed down from inside and the wastewater is drained from the bottom. The cleaned gas is then dehydrated by the gas and liquid separator and then discharged into the atmosphere via the stack; the liquid drained from the tank may be further treated for recycle.

2. Features
   (1) The compact scrubber is designed to maximize absorbing efficiency, which takes up comparatively small space.
   (2) The reactor enables recycle and reuse of the solvent to minimize production of wastewater.
   (3) It is engineered for optimal liquid and gas contact and minimum pressure loss.
   (4) The operation is fully automated, requiring no manual operating.

3. Specifications and Functions
   (1) Material: FRP, PP, PVC, PVC+FRP, carbon steel or stainless steel.
   (2) Size: Customized according to exhaust properties or client requirement.

4. Product Photo
VENTILATION & WET SCRUBBERS SYSTEM FOR ELECTRONICS MANUFACTURING PROCESS

1. Structure and Principle
The manufacturing process of electronics industry are normally complicated. A well-designed waste air exhaust system becomes very important. Carefully design on the process arrangement, ducting layout, static pressure control, waste air treatment, are all our service to the customers.

2. Purpose
Exhaust and remove all the pollutants, such as acids, alkalis, VOCs, from the manufacturing process.

3. Features
(1) Accurate Design on Industrial Ventilation.
(2) Flexible Performance by Flow Velocity Control and Damper control.
(3) Neatly Ducting and Equipment’s Configuration.

4. Product photo
WET GAS SCRUBBER

1. **Structure and Principle**
   Contaminated air contact the fluid, which absorbs, neutralizes some of the hazardous elements in the air, and clean particles also.

2. **Purpose**
   For processing various industrial exhausts and particle pollutants.

3. **Features**
   The process covers cooling, wetting, screening and absorbing.
   For some gas pollutants, wet absorbing/screening can produce or recycle useful chemical substances.

4. **Specifications and Functions**
   Customized according to environment

5. **Product photo**
FRP SCRUBBER

1. Structure and Principles
   This system transmits contaminants in gas into liquid through gas/liquid contact and then separates clean gas from the liquid containing contaminants to achieve cleaning.

2. Purpose
   It is suitable for all types of acid/alkaline gas generated in various industrial production processes.

3. Features
   The body of the tower is made of special anti-UV FRP and the smooth reflective exterior surface further increases the usage life of this product.

4. Specifications and Functions
   (1) Gas process volume: 50~1800cmm.
   (2) The unit is design as a vertical type-washing tower; horizontal type is also available upon request for customization.

5. Product Photo
PACKING WET SCRUBBER

1. Structure and Principle
   The basic design of this wet scrubber is to transfer those fumes into water through contacts between the waste gas and water or solution. Surface area provided by various packing offers a basis for inducing interaction between the liquid and the gas. The air or gas enters the bottom of the tower and receives a preliminary washing as the scrubbing liquid drains in an opposing flow from the packed and irrigated bed. This liquid, which is pumped into the top of the tower, flows down over the packing bed and covers the surface areas of the packing with a liquid film to accomplish the work of collection. Finally, the airstreams pass through a mist eliminator section before it is released.

2. Purpose
   (1) PCB manufacturing-Plating, Pickling, Dipping, Anodizing, Etching, etc.
   (2) Plating Industries-Plating, Pickling, Dipping, Anodizing, Etching... etc
   (3) Pharmaceutical Plant-Grinding, Filling, Screening operation.
   (4) Chemical Industries and Food Industries.
   (5) All kinds of boilers and incinerators.
   (6) Machinery manufacturing-Oil mist.
   (7) Dust contained gas and combustion waste gases from various sources Odder removal.

3. Features
   (1) Highest absorption dust removal efficiency.
   (2) No moving parts in the mechanism, requiring minimum maintenance.
   (3) Various kinds of construction materials are available needs of various operations.
   (4) Constant and small pressure drop allows large air volume.
   (5) Widely applicable for various industries.

4. Specifications and Functions

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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<td>5,900</td>
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<td>40</td>
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<td>100</td>
<td>450</td>
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AIR POLLUTION CONTROL

1. Structure and Principle
   After chlorine is collected, it is sent to neutralization equipment to touch and adsorb high-concentrated NaOH; chlorine emitted can meet the emission amount defined in the environment protection code.

2. Purpose
   Make acidic/caustic handling, dust handling, odor handling and chlorine neutralizing processes to waste gas.

3. Specifications and Functions
   Use FRP, PP or other anti-corrosive material to build the body structure; main structure thickness varies corresponding to different models and capacities.
WET SCRUBBER

1. **Structure and Principle**
   This facility mainly comprises a tank proper, circulation tank, filler layer, demister, circulation pump, fan, solvent system, power control system and sampling platform. This facility works by utilizing fan to create negative pressure for suction and draws flue gas into the tank. Through gas and liquid contact in the tank with mixture of recovery solvent, neutralization, oxidization or recovery of the mixture take place achieve the purpose of air purification.

2. **Purpose**
   This product is suitable of surface treatment, the dip, the etching, the exhausted membrane, the development, the galvanization for the system regulation and so on processing sour alkalinity waste gas.

3. **Features**
   Under the same condition, products designed by the company has lower pressure damages to the tower body, high processing efficiency, operation and maintenance, negative pressure, and strong structure.

4. **Specifications and Functions**
   This product can be customized in dimension and specification according to required wind volume, and can be made in vertical and horizontal forms and in 2 or 3 sections. The main materials used include SUS304, PP, PVC, and FRP.

5. **Product Photo**
VOC PACKING SCRUBBER

1. **Structure and Principle**
   Emission enters from the tank bottom while the recovery solvent flows down from tank top to effectively react with the emission in the filler tank. The top of the tank is devised with a demister and a recovery solvent nozzle; the center is the filler tank: recovery solvent flows from the top and passes through the filler layer to reach the circulation chute at the bottom for recycling.

2. **Purpose**
   Worksites producing VOCs such as chroming and spray-painting.

3. **Features**
   - (1) High absorbability for various hazardous gases.
   - (2) Even gas and liquid distribution for effective exposure and reaction.
WET SCRUBBER

1. Structure and Principle
   Emission is inducted evenly into the reactor, and effectively interact with recovery solvent sprayed down from top in the filler layer, then passes through the gas and liquid separation system to eliminate moisture for releasing clean air.

2. Scope of Application
   For treating industrial emission of petrochemical manufacturing, kiln-firing industry, electroplating, metal surface treatment, flue gas, boiler and furnace.

3. Features
   - (1) High-efficiency flush scrubber of 99% elimination rate.
   - (2) Large capacity, small system pressure loss.
   - (3) Simple structure, low equipment cost: low breakdown rate, easy maintenance, low operating cost.
   - (4) Light equipment weight, small equipment space for easy space planning.
   - (5) Made with acid, alkaline resistant PP, PVC, FRP.
FILLER AIR-JET SCRUBBER

1. Structure and Principle
Exhaust enters from the scrubber bottom; water or chemical added solvent is sprayed via a special nozzle to complete the initial cleaning. The solid filler spread on top of the filler layer serves as the medium for gas and liquid contact; the mixture is then demisted by the demist system; air is then released to the atmosphere to achieve the purpose of exhaust treatment.

2. Purpose
For treating exhaust produced from various types of manufacturing

3. Features
(1) High scrubbing, purifying efficiency, easy operation and maintenance.
(2) Recovery solvent can be recycled to minimize wastewater.
(3) Multi-layer filler design for flexibility.

4. Specifications and Functions
Can be customized according to exhaust properties or client requirement.
Material: Can be stainless steel, carbon steel, galvanized sheet, PP, PVC, and FRP.

5. Product Photo
Wet Scrubber
Treatment Air Volume: 2,000 m³/min.
REGENERATED THERMAL OXIDIZER

1. Structure and Principle
   The oxidizer incorporate two or three heat exchanger canisters type; each of them is filled with ceramic saddles. If we take three heat exchanger canisters type as an example, each of these canisters has different functions and are used alternatively in a cycle. At any given point in the operating cycle, one canister functions as an inlet (preheating incoming process exhaust), one functions as an outlet (removing heat from the clean outgoing oxidizer exhaust), and the third will be purged. The cycle changes approximately every 90 seconds, which allows the system to operate at a very high thermal effectiveness.

2. Purpose
   (1) VOC treatment in Coating line.
   (2) VOC treatment in Process line.
   (3) VOC treatment of flue gas.

3. Features
   (1) High thermal recovery rate to save the energy.
   (2) Low maintenance fee.
   (3) Low NOX contents in flue gas.

4. Product Photo

5. Award (Certified) Items
   Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 1999.
WASTE VOCS OXIDATION RTO & HEAT RECOVERY SYSTEM

1. Structure and Principle

   RTO Components:
   (1) Twin Bed of Low Pressure Ceramic Heat Media.
   (2) Combustion and Oxidation Chamber with High Density Insulation.
   (3) Two Inlet Plenums with Puppet Valves for Rapid Flow Direction Control.
   (4) Pre-Piped Fuel Train with NGI System.

   The VOCs laden waste air enters “A” ceramic bed to be preheated, then pass through the central combustion chamber where VOCs are oxidized into CO₂ and H₂O, and exits into “B” bed where combustion heat transfer from the hot gas back into the ceramic. The gas flow direction is auto controlled to maintain an even temperature profile between the twin beds.

   An additional Heat Recovery System can be specially designed for high concentration VOCs exhaust process, such as coating process, etc. After the waste VOCs is decomposed completely by a fuel-free RTO, the hot exhausted gas will be led to a Heat Recovery System. This Heat Recovery System employs Air/Liquid heating media for Direct/Indirect contact heat transfer. Almost all the heat energy of waste VOCs can be recovered and back to the plant process.

2. Purpose

   (1) Treatment for all kinds of VOCs & Odors exhaust.
   (2) Specially designed to be applied to the high VOCs exhaust industries, such as coating processes, drying process, heating process, etc. The additional combustion heat can be recycled by a Heat Recovery System. Not only eliminates the VOCs pollution problem, but also recovers heat energy, saves the plant fuel cost.

3. Features

   (1) Oxidation Temperature at 800 ~ 1,000 °C, VOC Destruction Efficiency Over 99 %.
   (2) Fuel Free Operation at Inlet VOC Lording Over 3% LEL (about 450 ppm).
   (3) Low Pressure Drop Ceramic Media with 95% Heat Recovery.

5. PLC Auto Controlled, Remote On Line Service Diagnostics.

6. Flameless VOC Oxidation, No NOx Occurred.

7. Puppet Valves for Rapid Air Direction Change, Within 0.7 Second.

8. Auto heat recovery control by pneumatic high temperature damper.

9. Reduces fuel expense, provides a most economical manufacturing process.

Product Photo
ACTIVATED CARBON ABSORPTION DEVICE

1. Structure and Principle
   After the filtering net filters the dust powder at the preceding process, activated carbon is then used to absorb organic agent and adores with a wide absorbing surface. After passing through absorption by the activated carbon, the clean air can then be discharged to the air purifier to the flue before releasing.

2. Purpose
   Chemical industry, painting & coating industry, plastic industry, paints production flow and various circles.

3. Product Photo
ACTIVATED CARBON ABSORBER

1. Structure and Principle

The active carbon absorber is a horizontal design with multiple layers of activated carbon, arranged in a vertical array to increase contact time. A removable screen is positioned prior to the activated carbon for removing particles in the waste gas and prevent clogging in the activated carbon.

2. Purpose

(1) Deodorization for wastewater treatment plants.
(2) Treatment of VOC such as toluene, trichloroethane.
(3) Deodorization for MSW bunkers.
(4) Exhaust gas treatment for surface coating / treatment plants.
(5) Waste gas treatment for plastic / rubber plants.

3. Features

(1) Top-in / bottom out of activated carbon allows easy access in loading / unloading.
(2) Easy replacement of filtering screen allows convenient access in maintenance.
(3) Dry process produces no wastewater.
(4) Saturated active carbon can be regenerated and recycled.

4. Product Photo

![Product Photo](image-url)
ACTIVATED CARBON ADSORPTION SYSTEM

1. **Structure and Principle**
The equipment mainly employs activated carbon to adsorb toxic gases and odors; aluminum fibers and non-woven filter are utilized for screening off particulates that makes it an excellent purifying system.

2. **Purpose**
For benzene, toluene, carbon tetrachloride, sewage odor, etc.

3. **Features**
   1. Capable of removing particles from air flow, and adsorbing hazardous pollutants in air.
   2. Modular design requiring small space; simple structure reducing breakdown rate.
   3. Employing multi-mix charcoal’s physical and chemical adsorbing properties for effective treatment of corrosive, odorous and toxic gases.
   4. Effectively clean particulates under 1μm.
   5. VOC can be completely eliminated without leaving odor.

4. **Specifications and Functions**
Customized design to meet environmental requirements.

5. **Product Photo**

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光騰工業科技股份有限公司

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E-mail : easton99@ms21.hinet.net  http://www.easton-eng.com.tw
ACTIVITY CARBON DEODORIZER

1. Structure and Principle

   This system uses the absorbability of activated carbon to conduct organic waste gas. After absorbed by activated carbon, the treated air is then discharged into the atmosphere. For waste gases of various properties, an initial filter can be installed in front of the activated carbon to reduce clogging.

2. Purpose

   It absorbs organic waste gas and odor.

3. Features

   (1) It is used to twitch for primary filter net.
   (2) Activated carbon filters are fed from top and removed from the side and for easy replacement.
   (3) It’s can also be used on other pollution control equipments.

4. Specifications and Functions

   Capacity: 10~400 m³/min.

5. Product Photo
VOC ADSORPTION DEVICE

1. Purpose
   (1) Washing of electronically and optical parts.
   (2) Tire renewal, Rubber, Glass fiber, Dye, Paint production.
   (3) Plastic, Printing, Glue, Agrochemical, Organic Solvent Production.
   (4) Aluminum to fit different circumstances.

2. Specifications and Functions

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<th>W (mm)</th>
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3. Features
   (1) Compact design, Easy for transportation and installation.
   (2) Rail type fixture of filter plenum, easy for installation and replacement.
   (3) Fit indoor and outdoor installation.
   (4) Can be combined with various of air pollution control equipments.
   (5) Fabricated with steel, Galvanized steel, stainless steel or Aluminum sheet.

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**VOLATILE ORGANIC EXHAUST TREATMENT FACILITY (FLUIDIZED BED)**

1. **Structure and Principle**
   Configuration: 1st fan, 2nd fan, suction, separator, condenser, site steam regeneration (SSR), chiller, THC Continuous Surveillance System.
   Principle: VOC passes the fluid bed system (containing GBAC) for pollutants to attach to GBAC; the cleaned air is then released. After which, GBAC is stripped of VOC in the separator through electric heating (400°C). The removed VOC is then cold condensed into wastewater for further treatment.

2. **Purpose**
   Manufacturing exhaust of semiconductor and related industries generally has greater wind volume (>10,000CMH) and low concentration (<800ppm as CH₄), and often carries chemicals of high boiling point and low differentiation.

3. **Features**
   (1) High operating stability, easy operation: the suction system of the fluid bed and separation system of the mobile bed are carefully designed; the charcoal globe has good flow and stable operation that functions steadily despite wind volume fluctuation to attain the designed treatment efficiency.
   (2) Safety: Flow format means deposit does not build up on the charcoal bed which may lead to ignition. N₂ is employed as the safety gas to ensure safety in high-temperature operating zones.
   (3) N₂ circulation for low cost: Designed with a second suction system; cleaner N₂ can be recycled to cut running cost.
   (4) No wastewater: The scrubber system is divided into 3 electro-thermal sections for indirect heating that produces no wastewater.
(5) Flexible system: high condensation rate (over 1000 times), back-end system offers flexible configuration to suit various condensers or combustors as required. It is an excellent solution for areas without gas supply; large wind-volume acceptance range, suitable for manufacturing systems of drastic wind volume fluctuation.

(6) Continuous monitoring: man/machine interface enables direct monitoring of the system’s operating status; treatment equipment’s inlets and outlets can be fitted with THC (optional) for uninterrupted surveillance, and various report, spreadsheet designs that are available to meet legal requirements.

4. Specifications and Functions

(1) Wind Capacity: 3,000~100,000 cm³/h.
(2) Concentration Capacity: 10~1,000 ppm (as CH₄).
(3) Condensation Efficacy: over 1,000 times.
(4) Elimination Rate: over 90%.

5. Product Photo
ACTIVATED CARBON REACTOR FACILITY

1. **Structure and Principle**
   This facility employs porous solids to treat fluid mixture for one or multiple ingredients to concentrate on the surface of the solids to achieve particle separation. Since the process can effectively capture low-concentration pollutants, it is prevalently applied in public hazard prevention such as recycle and purification of organic solvents and air condition deodorization.

2. **Purpose**
   Emission from PCB manufacturing, paint job, toxic emission from petrochemical manufacturing.

3. **Features**
   (1) Massive surface area.
   (2) Large capacity.
   (3) Selective adherence function for different gases.
   (4) High mechanical strength, thermal and chemical stability.
   (5) Wide supply sources and inexpensive.

4. **Specifications and Functions**
   (1) Cylinder mono-reactor.
   (2) Cylinder dual-reactor.
   (3) Rectangular mono-reactor.
   (4) Saturated charcoal can steam treated or directly replaced.
   (5) Capacity can be designed and manufactured according to requirement.

Product Photo
CATALYST CONVERSION FACILITY

1. Structure and Principle
   The facility utilizes the special property of catalysts in disintegrating hazardous emission for complete oxidation or conversion of exhaust gases into harmless gases or water at low temperature.

2. Purpose
   Various odor-producing sources including paint industry, ink manufacturing, rubber and synthetic resin manufacturing, food processing, printing and chemical industries

3. Features
   (1) High treatment efficiency, capable of complete combustion of pollutants.
   (2) Low operating temperature for great fuel saving.
   (3) Forestall second pollution through high-temperature combustion such as NOx, SOx.
   (4) Heat from gas treatment may be recycled.
   (5) Long catalyst lifespan; can be regenerated for reuse.
ACTIVE CARBON REACTOR FACILITY

1. Structure and Principle
   This system uses the surface forces of solids to adhere certain substances in fluids onto recovery solvents. It is the most commonly used absorption agent for active carbon.

2. Purpose
   Mainly for treating organic gases

3. Features
   (1) Type of active carbon can be selected according to exhaust properties; for large treatment capacity, equipment for recycling, active carbon may be fitted.
   (2) The preliminary mesh and active-carbon mesh may be designed as pull-out type for easy installation and replacement.

4. Specifications and Functions
   Size can be designed according to site requirement.

5. Product Photo

![Image of active carbon reactor facility]
ACTIVE CARBON REACTOR FACILITY

1. Structure and Principle
This system employs the absorption property of active carbon. In which, emission-carrying organic gas is inducted into the charcoal filter layer for capturing before releases to the atmosphere. The charcoal filter mesh is arranged in layers to expand surface contact with air. Powder mesh can be added for various emission property for preliminary screening to deter clogging of the charcoal filter. Recovery solvent or other adhering matters can be added for chemical absorption.

2. Purpose
(1) Cleaning of electronic parts, photoelectric instruments.
(2) Tire rework, rubber industry, fiberglass, dye, paint manufacturing.
(3) Plastic, printing, adhesive, pesticide, organic solvent manufacturing.

3. Features
(1) Pull-out type filter for easy installation and replacement.
(2) For both indoor and outdoor installation.
(3) Can be incorporated with other pollution prevention equipments.
(4) Can be customized in sub-steel sheet, galvanized sheet, stainless steel sheet, etc.
VOLATILE ORGANIC EXHAUST TREATMENT FACILITY（WHEEL）

1. Structure and Principle
   The system consists of a 1st fan, 2nd fan, wheel, incinerator（TO/RTO）, THC Continuous Surveillance System
   Principle: VOCs passes the wheel（containing hydrophobic inorganic recovery solvent）for reaction; clean air is then released, and pollutants attached to the wheel. VOCs are then stripped by high-temperature gas（180 ℃）; the stripped-off VOCs is then subjected to a vertical-burning incinerator.

2. Purpose
   Manufacturing exhaust of semiconductor and related industries generally has greater wind volume（>10,000cmh）and low concentration（<800ppm as CH₄）, and often carrying chemicals of high boiling point and low differentiation.

3. Features
   (1) Fully automatic continuous operation: System purification effectiveness is maintained over 90%（design can be elevated to 95% according to requirement）.
   (2) Non耦pling design offers low system pressure fluctuation; negative pressure operation produces low environmental odor.
   (3) PLC: Wheel part contains N₂ and fire auto sprinkler system; combustor is additionally designed with gas or diesel auto shutoff valve and flow adjust valve for precise control of fuel supply and emergency shutdown.
   (4) Heat is twice recycled with an aggregated rate of 80~90%.
   (5) Wheel is water washable: in treating emission that carries difficult or non-stick VOCs of high boiling point, the deposits on wheel surface can be removed via the auto washer to quickly restore the wheel’s function.
(6) Continuous monitoring: man/machine interface enables direct monitoring of the system’s operating status; treatment equipment’s inlets and outlets can be fitted with THC (optional) for uninterrupted surveillance, and various report, spreadsheet designs are available to meet legal requirements.

4. Specifications and Functions

(1) Wind Capacity: 10,000~100,000cmh.
(2) Concentration Capacity: 50~200ppm (as CH₄).
(3) Condensation Efficacy: 6~15 times.
(4) Elimination Rate: over 90%.

5. Product Photo
BIO-DEODORISATION SYSTEM

1. Structure and Principle
   The equipment is engineered by utilizing biological properties to disintegrate organic odor in air.

2. Purpose
   High efficiency for deodorizing low-to mid-concentration odors as well as amnion and nitrogen gases.

3. Features
   (1) Low operating cost, low pressure loss.
   (2) Capacity can be designed according to requirement.

4. Specifications and Functions
   Design according to requirement.
HIGH-BOILING POINT ORGANIC SOLVENT TREATMENT FACILITY

1. Structure and Principle
   Configuration: cooling pipe-coil, demister, thermal pipes (optional).
   Principle: Gas temperature is lowered to below the relative stem pressure of specific chemical to allow the chemical to condense and achieving the purpose of separation.

2. Purpose
   (1) High boiling point organic gas of high concentration >1%.
   (2) Flue gas carrying chemical of high boiling point and low steam pressure.

3. Features
   (1) Designed in compliance with PHA.
   (2) Pioneered design of washing water systems (TSMC plant 2, 10 years ago). It is equipped with self-cleaning functions to ensure the heat-exchange efficiency of the condensation tubes and fire safety.
   (3) It is equipped with self-clean function to ensure the efficiency of heat exchange and fire safety.
   (4) High-performance demister: High hydraulic load, low clogging, high demist efficacy (99% elimination rate for 3μm droplets).
   (5) Equipped with PLC and human/machine interface (optional).
   (6) Equipped with wind-volume adjustment system (25~120%).
   (7) Equipped with heat pipe-coil for thermal recovery, which cuts down fogging and frosting to a great scale.
   (8) Equipped with a circulation pump for controlling of the cool water temperature and adjusting of the condensing volume (pipe-coiler equipped with exposed temperature).

4. Specifications and Functions
   (1) This equipment is made with SUS316 grade.
   (2) The outlet temperature of the condenser can be controlled to 10~14℃.
   (3) The condensation efficiency of this facility reaches 70~95% (pending upon flue gas concentration).

5. Product Photo

華懋科技股份有限公司
DESICCANT TECHNOLOGY CORPORATION
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FLUE GAS DESULFURIZATION SYSTEM

1. Structure and Principle
   Waste-gas enters from bottom into the cyclone dust gatherer and mixed with treatment liquid to remove smoke dust, SOx, NOx. Waste gas passes through the through Venturi washer in a down-up direction for absorption reaction. This system uses different treatment chemicals for absorption reaction to achieve air quality that is compliant with release standards.

2. Purpose
   Various industries, plants, and exhaust gas from chimney.

3. Features
   (1) One system with two units to reduce costs of equipment purchases.
   (2) High performance for dust removal, desulfurization, and deodorizing.
   (3) Automatic chemicals feeding - low operation cost.

4. Specifications and Functions
   Specifications vary according to the field operation environment. Different designs are tailored for different pollutants, Material quality SUS304, SUS316, PP, FRP, PVC, galvanize, SS400... etc.

5. Product Photo
HIGH-TEMPERATURE WET DESULFURISATION EXHAUST AND DUST-COLLECTOR SYSTEM （WET CENTRIFUGAL TREATMENT TANK + VENTURI GAS REACTOR + DEACIDIFICATION FEED SYSTEM + WET FILLER REACTOR）

1. Structure and Principle

The system consists of a wet centrifugal treatment tank, Venturi gas reactor and wet filler Reactor. The system utilizes centrifugal force of the wet centrifugal treatment tank to fully mix the induced exhaust with the recovery solvent to achieve binding and remove SOx, NOx, HCl, fluorides and partial dust and heavy metals. This system further employs the 100% heat exchange capability of the wet centrifugal treatment tank to reduce exhaust temperature to cut down the initial equipment cost for the second-half of this system.

The exhaust from the first treatment tank is inducted into the gas reactor; the exhaust flow and spray are designed to form a straight angle, and, through the high-velocity collision theory, captures particles under 0.5μ. It is capable of capturing 90% strong of particles under 1μ.

The wet filler Reactor of this system consists of a treatment tank, circulation tank, circulation pump, filler, high-pressure nozzle, demister, chemical feeder, chemical tank, pH controller, ORP controller and liquid level controller, and where necessary (pertaining to environmental protection law), essential auxiliary equipments may be fitted according to the properties of the pollutants.

The waste-air exhausted from the Venturi is then inducted to the wet filler Reactor, and, via the filler’s porous structure, disperses the recover solvent for maximum exposure to achieve the purpose of separating, capturing and neutralizing. The liquid flow rate is determined according to the properties of the waste-gas. Then, HOG coefficient is calculated from the curve to determine the depth of the filler layer, and the pressure loss at filler layers is also calculated to serve as the basis for fan selection.

2. Purpose

It is designed to remove SOx, NOx, HCl, fluorides and partial dust and heavy metals from exhaust produced by high-temperature combustion.
3. **Features**

(1) Capable of processing high-temperature gases with moisture content.
(2) Capable of neutralizing dry and high concentration exhaust that are prone to explosion and ignition.
(3) Powerful wetting capability.
(4) Large-flow nozzle keeps from blockage to prevent compromises in treatment efficiency.
(5) Flexible selection of filler and quantity to accommodate different industries and waste-gas properties for optimal treatment efficiency and equipment cost saving.
(6) The discharge end is fitted with a gas/liquid separator capable of eliminating moisture particles over 10μ up to 95% to reduce loss of circulation water.
(7) Low cost and easy operation.

4. **Specifications and functions**

The system is designed for exhaust volume derived from mass energy balance calculation and combustion temperature; hence there is no set specification. The measurements of the equipment and specifications of auxiliary equipments are based on the numeric data of the designs. Materials used are SUS 304, 316 or 316L grade.

5. **Product Photo**

![Product Photo](image)
1. **Structure and Principle**

The system consists of a cooling tank, deacidification tank, activated carbon injector, pulse fabric filter, pipeline system and other essential equipment. High-temperature exhaust from a waste incinerator contains acidic substances, dust particles and dioxin that requires cooling, liquid alkaline, activated carbon injection systems and bag-filter type fabric filter to process the particles, gas pollutants, and dioxin. Processed air is drained by the fan to the stack for release.

The system is a semi-dry deacidification and dust removal system that operates on the theory as follows:

A vaporizer is employed for ratio control to reduce the exhaust inducted into the cooling tank to the set temperature; then the vaporizer turns the recovery solvent into mist of tens of μ diameter water droplets, which are then used for neutralizing the exhaust in the deacidification tank. Given the high exposure surfaces, the substance transformation and heat conduction rates are excellent.

In heat conduction, the droplets’ temperature rises from absorbing the exhaust heat, and in substance transformation, acidic gases are subjected to the gas/liquid interface for absorption, whereas the droplets’ moisture content are gradually evaporated through heat absorption. By this time, the droplets reached the tank bottom, and the water content would have been entirely evaporated and turned into powder to achieve wastewater treatment. The powders derived are partially released from the tank bottom, and the remainder is left on the fabric filter. Besides gathering powder dust, the fabric filter can further react with the pollutants remaining in the exhaust via the active recover solvent to achieve maximum overall system-processing efficiency.

In addition to injecting activated carbon into the process between the deacidification tank and the fabric filter, the activated carbon injection system can also reduce dioxin discharge to meet with legal requirement.
2. **Purpose**
   It is designed to remove SOx, NOx, HCl, dioxin, fluorides and partial dust and heavy metals from exhaust produced by high-temperature combustion.

3. **Features**
   (1) Precision mass and energy balance calculation determines the exhaust volume produced from waste combustion and the auxiliary fuel combustion.
   (2) PLC fully automatic control and on-line monitoring.
   (3) Temperature control is enabled by a ratio-type control valve and 2 fluid nozzles to set precise water volume and achieve vaporization.
   (4) The entire system operates at a temperature above acid emergence point that prevents equipment corrosion.
   (5) The cooling water is completely evaporated to preclude the need for wastewater treatment.
   (6) The treatment process is capable of eliminating dioxin to meet legal standards together with removal of other pollutants.

4. **Specifications and Functions**
   This system is designed for exhaust volume derived from mass energy balance calculation and combustion temperature; hence there is no set specification. The measurements of the equipment and auxiliary equipment specifications are based on the numeric data of the design. Materials used are SUS304 or SS400 grade.

5. **Product Photo**

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SEMI-DRY GAS FLOATING REACTOR

1. Structure and Principle
Semi-dry gas floating reactor is the latest breakthrough in technology. It is mainly a rearward equipment for exhaust treatment for incinerators or furnaces. The configuration includes a cylindrical reactor, whirlwind separator and particle recovery system. The principle is to utilize flue gas to liquidize lime particles inside the reactor into the floating state to maximize flue gas contact with lime particles and, hence, neutralize the acid content. The used lime powders may be recycled for more than 100 times. The treated gas is then subjected to filter for particle removal before release to meet with the legal exhaust emission standards.

2. Purpose
Rearward treatment system for removal of SOx, HCl from industrial boiler exhaust of incinerators, power or cogeneration plants.

3. Features
(1) Compact for direct installation onto the rearward treatment facilities of existing incinerator, cogeneration plant and industrial boilers.
(2) The lime powders are recyclable, making it a highly efficient and economical recovery solvent.
(3) System control of the facility is simple, requiring short engineering time and low setup cost.
(4) Few parts, low maintenance cost.
(5) Nozzles are easy to replace, without disrupting operation.
(6) Low lime consumption also means fewer wastes.
(7) No residue deposit on the interior walls of the reactor.
(8) Acid elimination rate over 99%.

4. Product Photo

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AIR POLLUTION CONTROL SYSTEM

1. Structure and Principle

- Dry system: Neutralized by CaO powder. Bag Filter remove particulate.
- Semi-Dry system: Neutralized by Ca(OH)₂ slurry. Bag Filter remove particulate.

2. Features

- Application for variable flue gas treatment.

3. Product Photo
FLUE GAS DRY FGD SYSTEM

1. Structure and Principle
Dry FGD System comprises a centrifugal reactor, a high temperature ducting, a bag house, a main exhaust fan, and an adsorption powder injection system.
The waste flue gas and the adsorbent piping are connected to the centrifugal reactor at tangential direction to obtain perfect mixing and adsorption efficiency. The airflow then leads to an acid/heat resistant bag house to remove the dust and fume. Meanwhile the powder cake on the bag surface will adsorb the acid once again while filtering.
This FGD system equipped with auto temperature and static pressure control, ensures stable operation of furnace.

2. Purpose
For Treatment of All Kinds of Flue Gas.
Remove: Fume, Dust, Dioxin, Sox, HCl, Nox, Fluoride, Mercury, H₃BO₄, etc.

3. Features
(1) All Pollutants Removed Simultaneously.
(2) Economic System Arrangement for High Control Efficiency.
(3) Simple Machinery for Easy Operation and Maintenance.
(4) Over Dew Point Operation, No Corrosion Occurred.
(5) No White Smoke Exhausted.
(6) Discharge Dry Dust, No Sludge, No Waste Water.

4. Product Photo
SEMI-DRY & WET FGD SYSTEM

1. Structure and Principle

Utilize semi-dry or wet scrubber method to achieve cooling, de-dust, and neutralization for high temperature exhaust flue gas. The flue gas normally contains fume, dust and toxic gas. This system is designed to comprise several of following equipment, depends on the quality of flue gas.

(1) Spray Tower
(2) Cyclone Scrubber
(3) Turbulent Scrubber
(4) Venturi Scrubber
(5) Packed Tower
(6) Bag House
(7) Electrostatic Precipitator

2. Purpose

Semi-Dry or Wet Treatment for All Kinds of Flue Gas.
Remove : Fume, Dust, Dioxin, Sox, HCl, Nox, Fluoride, Mercury, H3BO4, etc.

3. Features

(1) All Pollutants Removed Simultaneously.
(2) No Fire & Explosion Risk by Wet System.
(3) Low Initial Cost.
(4) Needs Careful PH Control to Maintain Good Efficiency and Avoid Corrosion.
(5) Might Exhaust Water Vapor (White Smoke) at Tail Gas.
(6) There Might Be Waste Water From The System.

4. Product Photo
SEMI-DRY TYPE FLUE GAS DUST COLLECTION, ACID-REMOVING AND DESULFURATION EQUIPMENT

1. Structure and Principle
   Apply low-temperature dust collection process to control B₂O₃ and solve for white smoke problem.

2. Purpose
   Flue gas handling workflow: cooling tower + semi-dry de-acid tower + active carbon injection system + bag dust precipitator.

3. Specifications and Functions
   (1) Acid removing efficiency > 90%.
   (2) Dust removing efficiency > 99%.
   (3) No secondary wastewater polluting problem.
   (4) Lighter corrosion issue (operated above dew point).
   (5) Emission opacity < 10%.

4. Product Photo
PUBLIC POLLUTION PREVENTION EQUIPMENT

1. Structure and Principle
   Facility development procedure:
   Planning→design→manufacture→install→test→service.

2. Purpose
   Applicable for treatment of hazardous gases of various industrial emissions including casting, processing, petrochemical, kiln firing, electroplating, etc.

3. Features
   Comprehensive service from planning, design, manufacture, installation, testing and trial run to after-sales service. It is economical and durable with excellent efficiency.

4. Product Photo
   Cu, Al, Fe Foundry Waste Treatment Facility
HIGH CONCENTRATION VOCS TREATMENT AND HEAT RECOVERY SYSTEM

1. Structure and Principle
   This system is specially designed for a high concentration VOCs exhaust process, such as coating process, etc. The waste VOCs will be decomposed completely by a fuel-free Regenerative Thermal Oxidizer (RTO). Then hot exhausted air will be led to a Heat Recovery System.

   This Heat Recovery System employs Air/Liquid heating media for Direct/Indirect contact heat transfer. Almost all the heat energy from waste VOCs will be recovered back to the plant process.

2. Purpose
   Can be applied to the industries of high VOCs exhaust, such as coating processes, drying process, heating process, etc. The RTO can be fuel-free operated, further more, the additional combustion heat can be reused by the Heat Recovery System. It not only eliminates the VOCs air pollution problem, but also recovers heat energy, saves fuel cost.

3. Features
   (1) Specially designed for coating process industry, etc.
   (2) High efficiency heat recovery.
   (3) All PLC control. Auto heat recovery control by pneumatic high temperature damper.
   (4) Reduce fuel expense, provide an economical producing process:
   (5) Positive pressure operation and a NGI system ensure customer’s process line to maintain a stable exhaust air volume and static pressure.
   (6) Flameless VOCs oxidation, no NOx occurred.

Product Photo

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WET DESULFURIZATION AND DEODORISATION SYSTEM (WET FILLER REACTOR + ACTIVATED CARBON DEODORISER)

1. Structure and Principle
   The system is a complete facility designed according to requirement of specific gas and organic release. It comprises a wet filler reactor, tank proper, circulation tank, circulation pump, filler, high-pressure nozzle, demister, solvent feeder, solvent tank, pH control system, ORP control system and liquid level controller.

   The deodorizer is designed with recovery material according to exhaust properties to enhance filter performance. Properties of gases are taken into account when designing the flow rate and fitting the primary mesh filter/catalyst filter to enhance the capture rate.

2. Purpose
   The equipment has extensive application in cleaning hazardous and odorous gases from manufacturing, sewage treatment plants to incineration plants.

   (1) Treatment of exhaust from refuse landfill seepage tank,
   (2) Treatment of exhaust from sewer, catchments,
   (3) Treatment of exhaust from incinerators,
   (4) Treatment of organic gases from various petrochemical processing,

   (5) Array of toxic gases including H₂S, SOx, HCl, Cl₂, HF, SF and neutralization of putrid gases.

3. Features
   (1) Capable of treating high-temperature and moisture-carrying gases.
   (2) Capable of neutralizing dry and highly concentrated exhaust susceptible to explosion and ignition.
   (3) Powerful hydrating capacity.
   (4) Large-flow nozzle prevents clogging that may hinder performance efficiency.
   (5) Filler type and volume are selected according to industry and exhaust properties to ensure maximum treatment efficiency and reduce initial setup cost.
   (6) Gas/liquid separator is fitted at the outlet, which is capable of removing over 95% of 10 μ droplets to cut circulation water loss.
   (7) The filter surface of the charcoal reactor may be determined according to exhaust properties for minimization of wastes.
   (8) The two-section filter design for treating hazardous and odorous gases cuts down the frequency for charcoal replacement operating cost.
(9) Charcoal replacement does not require personnel to enter the reactor; it can be pulled out directly from outside to prevent accidents.

4. Specifications and functions

(1) Material of tank proper: For high-temperature gases, the material can be SUS304, 316, 316L grade stainless steel, SS400 rustproof treated and spray-painted. For acidic and alkaline gases: PP, PVC, PE

(2) Charcoal deodorizer: The tank and interior framework are made of SUS304 or SS400 rustproof treated and spray-painted.

(3) Filler material: can be SUS 304, PP, and PVC according to exhaust’s physical properties.

5. Product Photo
WET DEODORIZATION & DESULFURIZATION FACILITY

1. Structure and Principle
This equipment is a cross-flow type system: waste gas enters from the bottom, and cleaned gas exits from the top; solvent is sprinkled down from the inside, and the treated fluid flows out from the bottom. The cleaned gas then passes through the active carbon layer for recovery before discharging into the atmosphere. The fluid flowing out of the tank can be treated for recycle and reuse.

2. Purpose
(1) The high-recovery efficiency makes the facility compact, taking up minimum space.
(2) Used solvent may be treated for recycle and reuse to cut down wastewater production to a great extent.
(3) Optimal gas and liquid contact, minimum pressure loss.
(4) Horizontal format may be customized according to client requirement.

3. Features
(1) For exhaust treatments of seepage from refuse landfills.
(2) For deodorization of sewage treatment plants.
(3) For exhaust treatment of incinerators and industrial boilers and furnaces.
(4) For deodorization of toxic gases including H₂S, SOₓ, NOₓ, HCl, Cl₂, HF, etc.

4. Product Photo
CENTRAL VACUUM CLEANER SYSTEM

1. Structure and Principle
   Utilize small-size pipe work, can easily clean up the factory area, work shop, clean room, machine room, even office. Simply insert the vacuum pipe nozzle into the wall-mount or floor-mount socket, then cleaning job can be operated. The pressure resist dust collector and vacuum blower can be located outside the area for easy maintenance.

2. Purpose
   For cleaning of floor, table, machine, clean room, and others. Also available for pneumatic conveying.

3. Features
   (1) Small size piping, easy installation for all kinds of work place.
   (2) Standard pipe nozzle attachments for easy cleaning job.
   (3) Powerful vacuum for exact cleaning.
   (4) Offer low noise design for special location.

4. Product Photo
PORTABLE INDUSTRIAL VACUUM CLEANER

1. Structure and Principle
   (1) The product is a vacuum cleaner applied in ordinary plants. It applies strong vacuum capacity to suck and remove powders, sands or other heavy dusts; move the holding bars to remove filter net. Use patent dust cylinder installing jig tool to engage/disengage dust collection cylinder easily.
   (2) Can approach to dust source and collect it without pipeline; cost saving and increase operation convenience and mobilization largely.
   (3) Suitable to collect dust in sandblasting, grinding wheel operation, wooden work, grinding or cutting process.
   (4) Made by SUS-304 clean-surface panel, outstanding outer appearance; use quick-operation clicking fastener and three-section assembly, easy to disassemble and clean up.
   (5) Apply Germany-made PE filter plate, firm, wearable, waterproof and corrosion-proof.
   (6) Dust collection efficiency meets 99.999%, outlet dust concentration < 1 Mg/m³; capable to screen out fine dust under 1 μm.

2. Purpose
   Suitable to filter particles of titania, dye material, carbon black, silicon sands, silica, cement, calcium carbonate, steel chips, Bakelite, fly ash, white smoke, soldering smoke and laser cutting fume; the dust is fine, viscous and moisture attachable.

3. Features
   High pressure operation, applicable to both dry or wet condition; apply the feature of cyclone and bag filter dust collectors; extremely high vacuum capacity.

4. Product Photo

RA Series-Dust Collector
### Specification and Functions

<table>
<thead>
<tr>
<th>Type</th>
<th>voltage</th>
<th>horsepower</th>
<th>Air flowrate</th>
<th>Static pressure</th>
<th>Inlet (Ø)</th>
<th>Exterior Dimensions</th>
<th>Gross weight</th>
<th>Remark</th>
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<tbody>
<tr>
<td>RA033</td>
<td>3 phase</td>
<td>2.2KW/3HP</td>
<td>3.5</td>
<td>2100</td>
<td>76</td>
<td>1100<em>430</em>1200</td>
<td>95</td>
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<td>3 phase</td>
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<td>100</td>
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<td>120</td>
<td>1100<em>550</em>1800</td>
<td>170</td>
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</tbody>
</table>

**RA Series**

RV Series Drawer-Type Dust Collector  
RV Series Funnel Type Dust Collector
U-Tec AIR PURIFIER (INCLUDING PHOTOCATALIC OXIDATION)

1. Structure and Principle

“Photo-Catalytic Oxidation” destroys Toxic chemicals and eliminates household odors and kill disease germs on contact. Activated carbon adsorbs toxic gases, and HEPA filter remove allergens. Five-layer filters of U-Tec AIR Purifier, offer the totally clean air.

Factory exhausts (A₂/ C₂H₂/ Cl₂/ HCHO/ HF/ Hg/ H₂S/ Mn/ O₃/ SiF₄)
Chemical, pharmaceutical smells/volatile organic compounds (VOC)/automobile exhaust (SO₂/ NO₂/ CO/ HC/ Pb)
Germ contamination (hazardous micro-organisms, dust, fungi, bacilli, spores, parasites on animals)
General pollutants (particulates/pollen/carbon powders/cigarette smoke/odor/human body odor)
Infection from patients’ saliva (virus infections including GI bacteria, asthma, TB)

2. Purpose

As general air quality deteriorates, most offices, hospitals and families are using air purifier to keep air fresh.
The pollutants as particles, animal furs, dead skin cells, spores, dusts, pollens, viruses, cigarette smoke and general corrosive gases, odors, and toxic gases that cause allergy, asthma, lung cancer, skin cancer, leukemia, respiratory diseases, Parkinson’s and nausea.

3. Features

Simultaneously execute four major functions: eliminate particulates, deodorize, neutralize toxic gases, and kill bacteria.
4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>ETA-560     For 100-200m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>680L×400W×1410H (mm) With brake wheel</td>
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<tr>
<td>Flow Capacity</td>
<td>750 cfm max</td>
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<tr>
<td>Blower Motor</td>
<td>110V/ 1 Ø / 60Hz, 1/3Hp</td>
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<tr>
<td>Gross Weight</td>
<td>≈ 150 Kgs</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>High-efficacy Filter</th>
<th>Model Items</th>
<th>H</th>
<th>HP</th>
<th>HB</th>
<th>C/I</th>
<th>C/IP</th>
<th>C/IB</th>
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<tbody>
<tr>
<td></td>
<td>Profiteer</td>
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<td>1 unit</td>
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<td></td>
<td>Multi-Mix Media</td>
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<td>HEPA Filter</td>
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<tr>
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<td>Post Filter</td>
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<td>PCO</td>
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</tbody>
</table>

5. Product Photo

光騰工業科技股份有限公司

EASTON ENGINEERING INTERNATIONAL CORP.

新北市三重區新興路五段 609 巷 14 號 7 樓之 9
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PHOTOCATALYST

1. Structure and Principle
   Certain materials can absorb light at specific wavelength to stimulate molecules into excited state and show active properties, able to react with other materials; these materials are called the “photocatalysts”.
   For pollution protection application, when light is illuminating to titanium dioxide surface, it will generate super strong decomposing capability and gradually disassemble dirt sticking on its surface into CO₂ & water. This theorem is applied to the illumination lamp cover of freeway tunnel that can long-term keep lamp cover clean with good luminance efficiency.

2. Purpose
   In brief, the photocatalyst can boost chemical reaction after exposed to light yet no change occurs to itself. For example, volatile organic materials contained in soil, underground water or air can be decomposed by way of photocatalystic effect and turn harmful material to harmless one.

3. Feature
   On the photocatalyst surface, since the inner electronics are stimulated after absorbing UV, it will form active oxygen material including the superoxide and 
   hydro atomic group; they will disassemble and eliminate the organic material touching the photocatalyst surface (causing moldy or odor). Thus, use this function it can disinfect, deodor, prevent dirt and remove environmental pollutants. Since the free radicale of hydrogen has powerful decomposition capability and hydrophile character, therefore, photocatalyst has the disinfecting, deodor and dirtproof capability.

4. Specifications and Functions
   The photocatalyst is a skill of “catalyst using photo energy to make catalytic reaction”. Before using it, we will coat or spray the catalyst on article surface forming a film; then, using photo energy to activate and remove dirt, disinfect, inhibit bacteria or clean up the reacted surface by oxidization or deoxidization actions. 40W*12UV tubes (2.2 A power consumption), stainless steel outer casing and 220V power voltage.

5. Product Photo
SPRAY SYSTEM EQUIPMENTS for ODOR CONTROL

1. Structure and Principle
   (1) ECOLO AirSolution is a complex mixture of essential oils, volatile odoriferous substances derived from plants.
   (2) Keep four kinds safety document:
       A. PRIMARY SKIN IRRITATION STUDY.
       B. PRIMARY EYE IRRITATION EVALUATION.
       C. RAT ORAL LD50 DETERMINATION.
       D. ACUTE INHALATION STUDY.
   (3) Keep for various AirSolution Material Safety Data Sheet
   (4) Types of Odors Treated with various Air Solution to primary odor control action by Neutralization.

2. Features
   (1) Convenient, Easy Installation, Operation to spray according to presetting cycle time & spray time.
   (2) 1~6 Spray Units, Operation to spray according to presetting cycle time & spray time.
   (3) 3~50 Nozzles Operation to spray according to presetting cycle time & spray time.
   (4) 60~150 Nozzles, Operation to spray according to presetting cycle time & spray time.

3. Purpose

<table>
<thead>
<tr>
<th>Product</th>
<th>Types of Odors Treated</th>
<th>Application Areas</th>
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<tbody>
<tr>
<td>Air Solution#123 Misting Spray AirSolution</td>
<td>Airborne H2S，NH3，Mercaptan Odors</td>
<td>Landfill Sites &amp; Transfer Stations Wastewater Facilities</td>
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<tr>
<td>BioStreme 111F Foaming Surfaces Biochemical</td>
<td>H2S，Mercaptan，Other Odors</td>
<td>Landfill Sites，Transfer Stations，Compost Operations，Recycling Centers</td>
</tr>
<tr>
<td>BioStreme 222 Saturated Wastewater Solution</td>
<td>Septic Wastewater Odors Digested Sludge Odors Mercaptan Odors</td>
<td>Septic Tank Wastewater，Treatment Systems Holding， Tanks，Ponds，Lagoons，Dairy Waste Anaerobic Digesters</td>
</tr>
<tr>
<td>Predator H2S H2S Scrubbers Solution</td>
<td>H2S，Mercaptan Odors</td>
<td>Scrubbers Tower</td>
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</tbody>
</table>

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FANS

1. Structure and Principle
   Years of research and experiment have enabled a type of design that minimized turbulence at fan input and output, which in turn diminishes noise and bolsters efficiency.
   (1) Shield: The device can effectively convert air pressure from the wide-wheel, and a thick steel plate is employed to fully prevent vibration and noise and strengthen its rigidity.
   (2) Wide-wheel: The design bends backward, and the curve radius, outlet angle, and inlet angle are coordinated with the shield dimensions. The dynamic is calibrated for optimal balance.
   (3) Axle: Premium carbon steel is used to assure against vibration.
   (4) Bearing: NSK bearing is selected for operation safety. All parts are precision made for durability.

2. Purpose
   (1) For boiler blowing and draining.
   (2) For dust draining and collection at grinding, powder manufacturing plants.
   (3) For ventilation at micro-dust worksites.
   (4) Powerful ventilation for chemical plants.
   (5) Air conditioning of buildings.
   (6) Cooling and ventilation of machinery.
   (7) Hot air circulation and emission.

3. Features
   (1) Comes with low, middle and high switches for varied wind volume and pressure.
   (2) Solid structure, economical and durable.
   (3) Outlet direction can be designed according to site requirement.
   (4) Accommodates dust filters.

4. Specifications and Functions
   (1) Dynamic curve: As the wheel bends backward, it is endowed with the feature of “limited loading”, yet motor can be selected to meet specific requirement.
   (2) Air volume, static pressure: The overall operation is very stable, enabling high efficiency for industrial operation and chemical manufacturing.
   (3) Yield and parallel operation: As the wheel bends backward, there is marginal yield impact, and hence enabling parallel operation for optimal efficiency.
TURBINE FAN

1. Structure and Principle
Following the laws of nature - hot-air ascents/cold-air descents. Wind drives the waterproof arch blades and solid turbine acceleration blades, which withstands 120 miles per hour of wind velocity to drive out hot air, odor, humidity, smoke, mist, steam and pollutant, and bring in fresh air to keep the interior fresh and comfortable as well as prolong lifespans of production machineries, materials and buildings.

2. Purpose
Drain and dissipate heat, ventilation.

3. Features
(1) One-piece assembly of stainless steel.
(2) Require no power, offering energy saving.
(3) No limitations to installation location.
(4) Special patented waterproof design.

4. Specifications and Functions
Made with SUS304 grade corrosion-resistant stainless steel, standard arch blade design, sealed gaps, designed for rain to drain off blades without leaking indoor. Simple installation, no operating noise, no operating cost.
TURBO FAN

1. Structure and Principle
   This system uses backward-leaning wind wheel, the material is a steel plate, and an acid-proof F.R.P. cover can be placed over the blades.

2. Purpose
   Air conditioner, ventilation, and all kinds of air pollution control equipment.

3. Features
   This product is strong and durable. Every fan is tuned for balance and has long usage life.

4. Specifications and functions
   (1) Capacity: 10~2,500 m³/min.
   (2) Static pressure: 100~1,500mmAq.
   (3) Power: 1~300hp.

5. Product Photo

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GOLDEN FLAG VENTILATION IND CO., LTD

高幬通風工程股份有限公司

GOLDEN FLAG VENTILATION IND CO., LTD

台中市南屯路二段 860 巷 37 號  No. 37, Lane 860, Nantun Rd., Sec.2, Tachang City
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E-mail: wisdomsales@goldengroups.com  http://www.goldengroups.com
STEEL-PLATE CENTRIFUGAL AIR-SUPPLY FAN

1. Structure and Principle
   A type of air supply that applies centrifugal compression to compress air supply to the required specification.

2. Purpose
   High efficiency, low noise and vibration.

3. Features
   Applicable for incinerator air supply, flue-gas equipment air supply, mechanical processing, manufacturing, and various factory emission.

4. Representative Attainments
   (1) Taiwan Sugar: 650hp Sugarcane Residue Boiler I.D. Fan.
   (2) Taiwan Chemical: 215hp Petrochemical Manufacturing Equipment.
   (3) Formosa Plastics, No. 6 Naphtha Cracker Plant: 300hp Incinerator I.D. Fan.
   (4) Jen Yuan Kai Li: 200hp Incinerator, Singapore.

5. Product Photo

6. Award (Certified) Items
   CNS compliant.
AIR SUPPLY FACILITY

1. Structure and Principle
   Fans are available in many types. However, the type, number, and arc of the blades dictate the air volume and pressure generation. It is important to select the materials and model that suits your needs.

2. Purpose
   Collect dust, drain smoke, air supply and suction for high-temperature furnace, air conditioner and boiler, incinerator and public hazard prevention.

3. Features
   (1) Can be customized according to air volume and pressure requirement.
   (2) High efficiency, low noise.
   (3) Resilient structure for durability.

4. Specifications and Functions
   (1) Fan type: Stroke Fan, straight-blade, constant load, Turbo Fan, blade-cut, Axial Fan.
   (3) Taiwan Salt.

5. Product Photo
   Double Inlet Airfoil Fans
   Q: 5000 m³/min  P:300mmAq
MULTI-BLADE CENTRIFUGAL FAN & BOX FAN

1. Structure and Principle
This multi-airfoil centrifugal fan can be tailored to suit various space and capacity requirements. Available models include mono-suction opening, dual-suction openings and box fan. Blades used for this multi-airfoil model are of front-arc design, and tens of blades may be fitted onto a wheel. This type of fan has features of low speed, low static pressure, and large air output that make it an essential model for air conditioner air supply.

(1) Fan body: For smaller models, the side panels are polished or galvanized and pneumatically assembled with reinforcement and an inlet funnel, which is then welded together with the turbine. The wheel is installed from the outlet, followed by fitting of the flow-stopper on the roller-box, and then secured onto the two side panels. For larger models, after the two side panels are completed, reinforcement is carried out; the support base is installed and, after adjusting all parts, the housing of the roller is assembled.

The assembly is welded all around inside of the fan to reinforce the overall structure and prevent moisture/water penetration from seams to cause rusting. For constricted space, the housing can be cut into top and bottom, and reassembled on site for installation and subsequent maintenance needs.

(2) The blades are designed with front arc for optimal efficiency and low noise.
Smaller models: For 7”-18” diameter fans, the blade corners are formed by pulling, which is done by a machine for resilience and precision.
Larger models: For over 20” diameter fans, the blades are individually produced via pneumatic and by rivet or welding, which are secured on to the center plate and inlet ring for strength and optimal output function. The assembled wheel is installed onto the housing and secured to the main plate with a stable leveler to bolster solidity, adjust alignment and prevent distortion.
3. **Features**

All blades are stamped molded, which are uniform in angle. Every wheel is calibrated by a precision balancer for stable operation and distinguished for features of low speed, low noise, low power consumption, low air pressure and large air volume. If required, a box fan may be fitted in the same unit. The housing is able to accommodate several dual-suction units to save space. The unit can also be hanged for convenient wiring.

4. **Specifications and Functions**

Models are available in mono-suction, dual-suction, and box fan. Material can be SS400#, galvanised steel, stainless steel, PVC, PP, FRP.

- Horsepower 1~400hp.
- Air volume 50 ~ 9,000cmm.
- Static pressure 10 ~ 100mmAg.

5. **Product Photo**

![Product Photo](image-url)
ROOFTOP AXIAL VENTILATOR, CENTRIFUGAL VENTILATOR & NON-POWER VENTILATOR

1. Structure and Principle

In an age of progressive technology and industrialization, traditional crafts handed down by our ancestors appear insignificant. Old buildings are generally confining in space, and hence have few windows for airflow; people have been contented with such little contact with the nature up to the 20th century. Nonetheless acceleration in technology in recent decades has gradually alienated people; taller and larger buildings continue to spring up, which inevitably ensues new needs. Thus for buildings forbidding installation of air conditioning and its piping, rooftop ventilator is invented, which is the only means of ventilation at present that does not take up living space, nor requires piping, yet ventilating the entire building with the greatest airflow at the most reasonable price.

(1) Machine body: As it is for installation on rooftop, both axial and centrifugal models are one-piece molded of FRP for the material’s lightweight and anticorrosive properties. For mono-unit models of larger capacity requirement, SS400, galvanised steel or stainless steel can be considered. Non-powered ventilator models are available in aluminium alloy, galvanised steel and stainless steel. The non-powered turbine design is available in aluminium alloy, galvanised steel, stainless steel and FRP.

(2) Wheel: All wheels include axial, centrifugal and turbine ventilators come with blades that are pneumatically formed, riveted, tuned and balanced. Material used is consistent with the body of the machine for uniformity.
Axle: As rooftop ventilators are installed on the roof, about 80% are designed as motor-driven units to minimize maintenance requirement.

Bearing: Motor-driven for maximum stability, requiring nearly no maintenance.

2. Purpose
For ventilation, deodorization, dehumidification, filtering of factories, hospitals, stadiums, auditoriums, theatres, labs, office/convention buildings and large architectural structures

3. Features
Aesthetic appearance, weatherproof, no piping, smooth exhaust, not occupying useful space, minimum horsepower for maximum airflow, nearly no maintenance motor-driven design

4. Specifications and Functions
Available in axial, centrifugal, non-powered, turbine non-powered. Materials can be aluminium alloy, galvanised steel, stainless steel, FRP, nylon fibre.

   (1) Horsepower: 1/2~30hp.
   (2) Air volume: 50~1,000cmm.
   (3) Static pressure: 3~25mmAq.
   (4) Non-powered ventilator.

5. Product Photo
RADIAL CENTRIFUGAL FAN

1. **Structure and Principle**
   The Radial centrifugal fan is developed to address the needs of individual industry. This model and other fans developed by the Company employ the function of pressurized floatation to achieve object moving through wind power in conjunction with the windpipe and other filter facilities.

   (1) **Machine body**: As the machine body is customized to accommodate the passage of voluminous powders and particles, the body of the machine is generally made of wear-resistant metals such as carbon steel, stainless steel, and galvanized steel sheets. For prolonged operation, the fan is structured with greater solidity than other models.

   (2) **Wheel**: The wheel is made by cold stamping and welded onto the main plate and sub-plate; the assembled blades radiate outward. For papermaking, the fan may be fitted with a cutter on top of blades and at inlet for breaking up pulp and fast transport.

   (3) **Axle**: Premium carbon steel is NC lathed and grounded with safety parameters fully considered in the design. It is assured against distortion or fatigue.

   (4) **Bearing**: Ball bearing is employed for regular models, and roller bearing for larger models. The housing is in cast steel, fitted with a convenient dust shield for easy inspection. Lubrication is by means of grease for convenient maintenance.

2. **Purpose**
   PCB suction and filtration, grinding/polishing, textile and fibre manufacturing, carpentry, pulp and powder conveyance, general boilers’ powerful ventilation, reactor exhaust

3. **Features**
   The equipment employs high negative pressure; the air supply and suction systems are capable of conveying large air volume and high pressure. The wheel has greater resilience against wear and withstands solid particles. However, since the fluid dynamics has to be compromised, the model is less efficient due to its sharper horsepower curve; the factor should be taken into account when selecting models.

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TEL : +886-3-350-0183  FAX : +886-3-359-4727
E-mail : jeen.fong@msa.hinet.net  http://www.jeenfong.com.tw
4. Specifications and Functions

(1) Comprehensive service from planning→design→manufacture→test→install→acceptance inspection according to client requirement.

(2) Most models are designed with mono-suction.

(3) A choice of materials - steel, galvanised steel, stainless steel, PVC, PP sheets.

(4) Horsepower 1~1,000hp.

(5) Air volume 50~3,000cmm.

(6) Static pressure 50~1,500mmAq.
TURBO CENTRIFUGAL FAN

1. Structure and Principle

Turbo centrifugal fan is also known as wheel fan; its moving direction is the opposite of multi-airfoil fans. As multi-airfoil model has many blades on the same wheel, the blades are slim and long; in operation they lean forward. Whereas, the Turbo model is to satisfy high air volume and pressure requirement, hence the blade structure leans backward in motion. For excellence of structure and performance Turbo tops all other fans and is one of the mainstream model employed in industries.

(1) Machine body: Housing is designed for heavy-duty usages, which is made of high strength steel. The base supporting both the body and the motor is a steel chute assembled for structural reliability and long operating life. To accommodate installation sitea, the housing can be cut into top and bottom and the wheel can be removed for installation without moving the inlet/outlet pipes for convenient maintenance. The beveled-in parts of the housing are welded on the inside against infiltration to prevent rusting. After assembly, the unit is 100% buffed and ground and then painted with several coats of paints for protection.

(2) Wheel: Backward leaning in operation: The sheet material and blade thickness have been computed for strength and analyzed for flow precision. Welded wheel, through stress neutralization and lathing, is computer calibrated for high-speed rotation, offering benefits like stable operation, marginal vibration, high efficiency and low noise.

(3) Axle: Premium carbon steel is NC lathed and grounded, and as safety parameters have been fully considered in design, it is assured against distortion or fatigue. Axle direction and bolt cap connecting to the wheel husk are especially designed: wheel assembly does not require knocking about and removal does not require pull out of the wheel; axle direction linked to the belt is a dual-cone sleeve for easy dismount of belt for convenient maintenance.

(4) Bearing: Ball bearing is employed for regular models, and roller bearing for larger models. The housing is in cast steel, fitted with a convenient dust shield for easy inspection. Lubrication is by means of grease for convenient maintenance.
2. **Features**
The computer-aided design of backward leaning blades have such benefits as optimal efficiency, stable operation, low noise, making it a better choice for conveying powder-carrying emission than the airfoil-type. Each fan is tested according to CNS, and documented with function curves.

3. **Specifications and Functions**
Available in single or multiple sections for meeting function requirement

(1) Mono-section material can be SS400, galvanised steel, stainless steel, PVC, PP, FRP
A. Horsepower 1hp~2,000hp.
B. Air volume 50~3,500cmm.
C. Static pressure 50~1,500mmAq.

(2) 2 to multi-section spec
For configuration of two or more sections, the machine body is available in carbon steel, stainless steel, cast iron and aluminium, and the transmission is available in both belt and motor driven.
A. Horsepower : 1~400hp.
B. Air volume : 10~220cmm.
C. Static pressure : 800~8,000mmAq.

4. **Product Photo**

![Product Photo](image-url)
AXIAL AIR-SUPPLY FAN

1. Structure and Principle
   Our axial suction and supply fans are designed to cater to different environments and industries and developed under the requirement for space efficiency and large air capacity, which make them different from common centrifugal designs. Since the suction direction and release direction of an axial fans are aligned in straight-line to the motion, it is dubbed to the axial motion. This type of fans is driven by airflow on blades, thus making it possible to attain maximum air volume in minimum space.

   (1) Machine body: Looking like a windpipe, the two ends are fitted with flange for connection to system pipelines. With its simple structural design, it takes up the least space for the same air output capability.

   (2) VAF:
      A. Aluminum alloy airfoil of 60-80% capture rate
      B. Air volume can be adjusted as required; adjustable blade angle for power saving
      C. High efficiency, marginal pressure fluctuation on axle drive, overload prevention

   PBF-A: Fan-shape blade is made of aluminium alloy or steel sheet; large air volume, high efficiency, linear piping available

   (3) Axle: Premium carbon steel is NC lathed and grounded with safety parameters fully considered in the design. It is assured against distortion or fatigue.

   (4) Bearing: Ball bearing is employed for regular models, and roller bearing for larger models. The housing is in cast steel, fitted with a convenient dust shield for easy inspection. Lubrication is by means of grease for convenient maintenance.

2. Purpose
   Fire ventilation; air supply for textile, air-con, tunnel; textile factory wetting equipment, ventilation for large factories and buildings, dry oven exhaust equipment.
3. **Features**

Large air volume, low air pressure, small horsepower, simple structure, inexpensive, small space requirement, can be hanged or installed on ground, capable of straight-line connection

4. **Specifications and Functions**

(1) Machine body is generally carbon steel, galvanised steel, stainless steel, FRP.

(2) Horsepower 1~100hp.

(3) Air volume 50~2,000cmm.

(4) Static pressure 10~300mmAq.

5. **Product Photo**
MULTI-BLADE CENTRIFUGAL FAN

1. Structure and Principle
   Our Airfoil centrifugal fan is engineered based on the latest aeronomic development and application of Airfoil functions to expand application of fluid mechanics.
   (1) Machine body: The appearance is same as multi-airfoil model, but since the suction inlet is designed as bell mouth, it enables ideal flow pattern, thus reduces turbulence noise at the inlet greatly compared to other fans.
   (2) Wheel: The design has sectioned AWF (airfoil wheel type), blades are welded onto the main and sub-plates, making the structure sturdier than other fans for good adaptation to high speed rotation.
   (3) Axle: Premium carbon steel is NC lathed and grounded with safety parameters fully considered in the design. It is assured against distortion or fatigue. Axle direction and bolt cap connecting to the wheel husk are specially designed: wheel assembly does not require knocking about, and removal does not requires pull out of the wheel; axle direction linked to the belt is a dual-cone sleeve for easy dismount of belt for convenient maintenance.

2. Purpose
   Prevailingy applied in forced air supply; gas conveyance system; semiconductor, photoelectric, traditional manufacturing industries; particle conveyance, environmental protection equipment.

3. Features
   Extant load-limited fans are improved into an upgraded model of extant load-limited fan. AFO-S, AFO-D achieve higher efficiency and lower noise
   (1) As the blades are designed for minimum fluid dynamic loss, it yields limited load with high efficiency and low noise.
   (2) From the bell-mouth inlet through the wheel to the casing, the streamline design is ideal which ensues 10%dB less in noise than other models, especially effective for eliminating bothersome low-frequency noise.

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3. As the blade structure is more solid than others, the static application range is wider.

4. Specifications and Functions
   1. Comprehensive service from planning→design→manufacture→test→install→acceptance inspection according to client requirement.
   2. Available in mono-, dual-suction and box assemblies according to actual needs.
   3. A wide choice of materials - steel, galvanised steel, stainless steel, PVC, PP sheets, FRP.
   4. Horsepower 1~1,500hp.
   5. Air volume 50~100,000cmm.
   6. Static pressure 50~1,000mmAq.

5. Product Photo
ACID/ALKALI RESISTANT FAN

1. Structure and Principles
   Runner blades are designed in the back-leaning structure and the axial drive serves as a constant load device; therefore, there is no worry about motor overload. It is mainly consists of blades, a shell, driver mechanism, and supporting mechanism. Its theoretical efficiency is high and is applicable to a wide range of air exhaust and blowing purposes.

2. Purpose
   It is applicable to a wide range of industries that have needs to convey acid/alkaline gases; ex: electronic, plating, petrochemical, and surface treatment industries.

3. Features
   (1) It was development through a joint venture with the Mechanical Industry Research Laboratories of the Industrial Technology Research Institute.
   (2) The blades, shells, and protective accessories are made of FRP; therefore, they have good anti-acid/alkaline and anti-corrosion qualities.
   (3) Certified by AMCA experimental test - Its efficiency is as high as 74.76%, which enables the users to save a large amount of operating costs.
   (4) Patented oil-bath axle design upgrades the usage life of the axle.
   (5) Over Lap design for the vent opening prevents back-flow and leakage loss.
   (6) The shell is covered with special FRP to enhance its anti-UV function.

4. Specifications and Functions
   (1) Process volume 50~2,800cmm. Press still pressure 25~800mmAq.
   (2) Exterior specifications: Please refer to the catalog.

5. Product photo

6. Award (Certified) Items
   Taiwan Environmental Manufacturers Association certified the product for environmental protection quality standard in 2000.
BLOWER

1. Structure and Principle

When impeller rotates, gas filled within impeller will be accelerated along the blade’s radial direction from the rotation; after air enters into outer air ring, it will return back to the root portion of blades made from pressure difference and accelerated once again; thus air turns inside the air ring cyclically to gain pressure and emit out from outlet since its pressure exceeds the atmospheric one.

2. Purpose

(1) PCB: can work with driller, forming machine or edge-handling machine.

(2) Ordinary factory: applied to lathe, miller, grinding machine, air extraction, ventilation and air conveying.

3. Feature

(1) High quality.

(2) High efficiency.

(3) High air pressure.

(4) Low noise.

(5) Long operation lifetime.

(6) Easy to maintain.

4. Product Photo

Multi-stage blower (cast type)
DUCTS AND DAMPERS FOR CHEMICALS EXHAUST SYSTEM

1. Structure and Principle
   (1) Semiconductor manufacturing process involves many solvents, acids, and organic solutions; hence, chemical resistant exhaust systems play a critical role.
   (2) A-Tech ductwork uses stainless steel as the base material. Its interior is coated with ECTFE, which has excellent chemical and electric resistance and is fire retardant. A-Tech ductwork is widely used for chemical exhaust systems for semiconductor manufacturing industries.

2. Purpose
   Corrosive and toxic exhaust applications.

3. Features
   (1) Interior of the duct and damper is coated with ECTFE coating, which is highly resistant to chemical, electricity and fire.
   (2) The base material used is SUS 316, which is rust resistance.
   (3) Pre-fabricated in factory and assembled on site for faster installation.
   (4) FM Approved.

4. Specifications and Functions
   (1) Duct（Round and Rectangular）:
      A. Material：External SUS316L, Interior ECTFE coating.
      B. Property：Chemical, Corrosive, Electric and resistance.
      C. Dimension:
         a. Round duct：∅4” ～ ∅100”
         b. Rectangular：4” ×4” ～ 100” ×100”.upon customer’s request.
   (2) Damper（Round and Rectangular）:
      A. Material：External SUS316L, Interior ECTFE coating.
      B. Property：Chemical, Corrosive, Electric and resistance.
      C. Dimension:
         a. Round Damper：∅4” ～ ∅50”
         b. Rectangular Damper：Upon customer’s request.
CARTRIDGE FILTER

1. Structure and Principles

This system expands the dimension by folding the filter materials into star shapes to accomplish maximum filtering with minimum dimension. The two ends of the filter are molded with Poly Urethane into a tube to form a self-supportive unit. Users can also chose to install specially designed insulation chips to enable the tubes to sustain high-pressure dust gas while maintaining good ventilation without distortion. Various filter materials are available for various usages; they include Polyamide, Polyester, Polypropylene, Nomex, Teflon, Glass, Cellulose, and more. The filter materials are strong and washable and are capable of filtering dusts from rough 30 μm to as fine as 0.1 μm. They also have high heat-tolerance, sustaining heat from 80°C to 120°C. Special anti-static filters are also available.

2. Purpose

(1) Dust collection and recycling of industrial dust: ex: asbestos, fertilizer, animal feed, PVC, rubber grinding, power conveying, powdering, mixing, sand spay, ceramic production, tile production, spray paint, leather, coloring, paper, cement, coal, plywood, wood products, and chemical materials.

(2) Powder conveying: gas conveying, end-collection for Roots blowers

(3) Material storage air vent

(4) Steam turbine power generator, air inlet for air-compressor.

(5) Dustless air-vent system: japanning paint room, spray paint room, offices, and family air-ventilation.

3. Features

(1) Easy to maintain.

(2) Good air permeability.

(3) Wide-range of choices. Special chemical-resistant and anti-corrosion materials are also available.
（4）Filter tubes can be back-washed by using the pressure-differentials to extend its usage life.

（5）Comes with round and square disk designs as well as upward pull-out, downward pull-out, and track types to suit various dust gathering machines.

（6）Small with minimum filtering dimension.

（7）Tough and durable.

4. Product photo
NOISE BARRIER

1. Structure and Principle
   Ameliorate noise structure or use sound absorber and sound insulation to control noise. Besides, using barrier, changing absorber structure or enlarging the distance to reduce the noise transporting effect.

2. Purpose
   (1) Sound absorber board and sound absorber wall in the surrounding of road.
   (2) Sound insulation wall of cooling tower.
   (3) Ceiling and noise insulation room.

3. Features
   (1) Absorption ratio NRC>0.7.
   (2) Easy to install.
   (3) No pollution and easy to reuse and recycle.

4. Specifications and Functions
   (1) Sound absorber wall: 615mm(W)*1,215mm(L)*10mm(T).
   (2) Sound absorber board: 603mm(W)*603mm(L)*1.2mm(T).
   (3) Sound absorber cotton: 603mm(W)*603mm(L)*10mm(T).

5. Product Photo

6. Award (Certified) Items
   Taiwan Environmental Manufacturers Association certifies the product for environmental protection quality standard in 2000.
SOUNDPROOF ROOM FOR THERMAL SPRAYING

1. Structure and Principle

Using steel-made walls and soundproof and fireproof materials on the roof to form a enclosed space, effectively insulating noises that are hazardous to human bodies due to high frequency process or high noise process.

2. Purpose

Sound insulation from spray solders, and equipments for heavy grinding.

3. Features

(1) May be customized according to the equipment size

(2) Air conditioners, dust collectors, air ventilators may be further installed to reduce the discomfort of operators.

(3) Robots may be used to control the equipments remotely, thus separating the working rooms from operation rooms.

4. Product Photo
NOISE ABSORBER

1. **Structure and Principle**
   Sound wave passing through different mediums produces varied intensity diminution; hence greater sound muting materials can be utilized for noise reduction.

2. **Purpose**
   Prevent various noises generated during processing, such as, Spray rod welding, Sand Spraying, Compressor, Windmill, Blower, Cooling Water Tower, Punch.

3. **Features**
   Noise material should be selected according to operating temperature for minimum pressure loss.

4. **Product Photo**
   Spray Muffle Room
Overview of Waste Treatment and Recycling Equipment

A waste is the useless substance in gas, liquid and solid forms produced and discarded by human during the process of production and consumption. According to the definition presented in the 2nd article of Our Nation’s current “Wastes Cleaning Regulations”, the general wastes refer to domestic or other non-industrial refuse, human and animal discharges as well as carcasses in solid and gas forms, which will pollute the environmental sanitation. Hazardous industrial wastes are defined as the toxic, dangerous discarded substances with concentration and quantity high enough to affect human health or pollute environment. The general industrial wastes stand for any non-hazardous industrial wastes.

The concept of managing solid wastes has changed drastically recently. “Discarded Wastes” are no longer considered as useless substances; they are considered as temporarily misplaced resources. Thus, implementing resources recovery and reuse of discarded wastes is a universally accepted value. The Government has drafted “Resources Recovery and Reuse Regulations” to facilitate the recovery tasks and set the direction for future waste disposal. Recovery of resources from wastes must be the first priority. If the waste cannot be reused, it will then be discarded and disposed of.

I  Technology for Waste Disposal

The waste disposal refers to applying physical, chemical and biological methods to speed up the cycling process in the natural environment in order to rapidly decompose the wastes into harmless products to achieve the objectives of reducing quantity, resource
recovering, removing hazards and stabilizing. The primary consideration for disposal of wastes is to conform to the regulations of current laws and regulations in achieving waste reduction, recovery and reuse. When the recovery is not required by laws and regulations or when cost-effective technology is not available, the subsequent disposal methods will be considered for achieving the non-hazardous objective in order to avoid environmental pollution.

The technology for disposal of wastes includes preliminary, intermediate and ultimate disposal. 1. Preliminary Disposal: consisting of collection, classification, temporary storage, transportation, cracking, recovery and reuse. 2. Intermediate Disposal: encompassing (a) the various physical and chemical methods, e.g. neutralization, oxidation, activated carbon adsorption and reverse osmosis, etc., and (b) biological methods, including sanitary landfill and composting, and (c) thermal method: consists of thermal cracking, wet oxidation and various forms of incineration, and 3. Ultimate Disposal: including: (a) stable landfill, (b) sanitary landfill, (c) close landfill, and (d) ocean disposal. Commonly used waste disposal technology and equipment are shown in Figure 1.
Ⅱ、Commonly Used Domestic Waste Disposal Equipment

1、Preliminary Disposal

The objective of preliminary disposal is to protect the subsequent disposal operations in addition to categorizing valuable resources. Preliminary disposal methods include cracking and sieving. Waste cracking will increase the apparent specific weight of the waste and to increase the efficiencies of waste separation and incineration. The cracking can be accomplished using pressurized cracking, impact cracking, shear cracking and impact/shear cracking. Sieving waste is to group valuable components of the waste to facilitate recover and reuse. It is usually combined with the cracking operation using gravitation, wind, magnetic, sieving, vortex and electricity, electrostatic and photometric separators. Using a proper material for cutting blades is of great importance to manufacturing the cracking equipment. Domestic companies currently do not have
the capability to produce the blade and thus it is imported. The general cracking equipment can be manufactured by domestic companies.

2. Intermediate Disposal Equipment

The intermediate disposal refers to the physical, chemical and biological reactions used to achieve waste quantity reduction, hazard removal and resource recovery. The function of intermediate disposal can be classified into three categories of incineration, composting and purification. Incineration is a rapid oxidation reaction. It is the most widely used technology in Taiwan. This method uses various forms of incinerators to achieve quantity reduction with exceptional results. Thermal cracking can be said as another form of low-temperature incineration. Composting is the biological process using microorganisms to degrade, convert and stabilize organic substances. The resulting product is organic fertilizer that can be used as soil conditioner. The composting equipment can be used to carry out natural piling, static piling and reactor composting. The objective of purification is to raise the purity of the recoverable components contained in the waste such that its economic value can be boosted. Main equipment used in purification consists of distillation, electrodialysis, chemical extraction, ion exchange, membrane separation and metallurgy, etc.

As domestic equipment manufacturers on incinerators are concerned, most companies produce medium- and small-scale industrial waste incinerators. Large incinerators are produced based on technical cooperation with European or Japanese companies. In recent years, conventional industries have been moved out of Taiwan. Further, the policy of reducing domestic wastes in cities has been successfully implemented. Thus, the need of incinerator capacity is
reduced. In recent years, the domestic market has shifted toward composting and companies have the capability of designing and manufacturing most equipment used in the composting system. As the purification equipment is concerned, although the process and equipment are mostly developed as for chemical engineering applications, the domestic companies invest in the manufacturing already.

3  Ultimate Disposal Equipment

The sanitary landfill is the ultimate disposal of general wastes. Its function is to separate wastes from the environment in a safe and sanitary manner. The wastes are converted into solid, liquid and gas by-products through the degradation by microorganisms contained in the wastes and the soil such that quantity reduction, stabilization of the wastes and safety are warranted.

Most cities and villages have built refuse incinerators. After resource recover, the remaining wastes are incinerated. The resulting fly ash and bottom ash are the target of resource recovery and reuse. Thus, the ultimate goal of zero discharge will be achieved.

Except the impermeable membrane and methane collector & burner, future ultimate disposal of wastes will be implemented via resources recovery and the equipment will be designed and constructed as a resources recovery plant instead of waste disposal facilities.
HYDRAULIC REFUSE COMPRESSION & REFRIGERATION PROCESSOR

1. Structure and Principle

(1) This equipment is equipped with a compression function (ratio of 3:1). It is small in size with large capacity requiring small installation space.

(2) Refuse feed→compression→refrigerated storage→release and transport→fully automated.

2. Purpose

(1) This equipment is equipped with a refrigeration function to prevent odor, ensuring environmental hygiene.

(2) This machinery comes with auto lift for convenient, easy loading/unloading.

3. Features

(1) This high-performance processor is capable of round-the-clock operation without manning.

(2) It is designed with dual sealing and a stainless steel storage tank to prevent second-time pollution. It is durable up to 10 years.

(3) It accommodates all types of collection trucks and is applicable for basement setup as well as open space.

4. Specifications and Attainments

<table>
<thead>
<tr>
<th>Model</th>
<th>CT-10 0</th>
<th>CT-20 0</th>
<th>CT-40 0</th>
<th>CT-60 0</th>
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<tr>
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<td>6</td>
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<tr>
<td>L (mm)</td>
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<td>4,840</td>
<td>5,980</td>
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<td>W (mm)</td>
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<tr>
<td>H (mm)</td>
<td>1,920mm(standard): 2,700mm(adjustable for ascending)</td>
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<tr>
<td>Electrical Capacity (kw)</td>
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<td>4.8</td>
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<tr>
<td>Machine Weight (kg)</td>
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<td>2,200</td>
<td>2,600</td>
<td>2,800</td>
</tr>
<tr>
<td>Refrigeration Temp</td>
<td>5°C~10°C adjustable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corresponding Vehicle</td>
<td>Compactable sanitation lorry or regular van</td>
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</tbody>
</table>

5. Product photo

![Product photo](image_url)
1. **Structure and Principle**

   (1) Simple operation: refuse feed $\rightarrow$ compression $\rightarrow$ storage. It is fully automated for safety and hygiene, enabling more expedient and convenient waste collection.

   (2) Compression capability for general refuse is 3:1, which cuts down storage room requirement.

2. **Purpose**

   Equipped with simple crushing and compression function to reduce collection frequency and cost.

3. **Features**

   (1) Automatic sterilization and deodorization to deter infestation of insects, bacteria, and germs and infection (dengue fever).

   (2) Dual insulation to prevent refuses exposure and leakage to ensure environment sanitation.

4. **Product Photo**

5. **Specifications and Functions**

<table>
<thead>
<tr>
<th>Model</th>
<th>CT-4</th>
<th>CT-6</th>
<th>CT-8</th>
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<th>CT-12</th>
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<td>8</td>
<td>10</td>
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<td>L (mm)</td>
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<td>H (mm)</td>
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<td>4.7</td>
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<tr>
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<td>4,500</td>
<td>4,800</td>
<td>5,000</td>
<td>5,400</td>
<td>7,500</td>
</tr>
</tbody>
</table>
RESOURCE RECYCLE EQUIPMENT

Waste Crusher and Recycle Sorter

1. Structure and Principle
   Employ the principle of shearing for compression.

2. Purpose
   Suitable for steel, aluminum cans, glass bottles and PET bottles.

3. Features
   Greatly reduce volume of recyclable wastes.

4. Specifications and Functions

<table>
<thead>
<tr>
<th></th>
<th>Steel/Al. Can Collector</th>
<th>Glass Bottle Collector</th>
<th>PET Bottle Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Capacity</td>
<td>110V 1/2hp</td>
<td>110V 1/2hp</td>
<td>110V 1/2hp</td>
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<tr>
<td>Capability</td>
<td>&gt;600pcs/hr</td>
<td>&gt;300pcs/hr</td>
<td>&gt;300pcs/hr</td>
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<tr>
<td>Machine Depth</td>
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<td>650mm</td>
<td></td>
</tr>
</tbody>
</table>

5. Product Photo

Waste crusher

Medium Crusher

Small Crusher
YK-100 LOW TEMPERATURE SPRAY SOLID LIQUID SEPARATED MACHINE

1. Structure and Principle
   At treatment processing, sewage liquid is continually pumped up to the nozzle installed at the top of the drying chamber, then is sprayed in the form of a fine droplet dispersion into a circulating current of air. The sewage solids may be dried at the drying chamber, water molecules will be condensed at cooling system. The processing outlet connected to two tanks. One tank contains water. One tank contains concentrated solid. The sewage treatment is accomplished at real-time.

2. Purpose
   The solid and liquid separation processing of electroplate waste liquid, industrial waste liquid.

3. Features
   A significant advantage of this type of technology is entirely different from so called traditional high temperature spray dryer. (normally above 100℃(212°F). It provides a means of comparative low temperature (or be defined medium temperature / 30℃~60℃). It is very energy efficient, no any impacts to the environment protect. It should become best, people-friendly solution of sewage treatment.

4. Specification and Functions
   (1) Operating temperature: 30℃~50℃.
   (2) 1~5 liter per hour / process source.
   (3) according to the viscosity & density of material /product.

5. Product Photo

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TRUE TEN INDUSTRIAL CO., LTD

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— 304 —
YK-111 LARGE SPACE LOW TEMPERATURE COOL WIND SOLID-LIQUID-SEPARATING MACHINE

1. Structure and Principle
   The industrial waste is poured in the plate of the equipment. It would arise low / medium temperature air current at processing procedure. The circulating air current arisen from the main machine would blow the liquid molecule to condense apparatus, then condense it and dilute it to be in conformity with legal standard. Then, retrieve or bury or emission it sees the after usage difference.

2. Purpose
   The solid and liquid separation processing of the electroplate waste liquid, industrial waste liquid.

3. Features
   A significant advantage of this type of equipment is entirely different from so called traditional high temperature spray dryer. (normally above 100°C)(212°F).
   It provides a means of comparative low temperature (or be defined medium temperature / 20°C~50°C ). It is very energy efficient, no any impacts to the environment protect. It should become best, people-friendly solution of sewage treatment.

4. Specification and Functions
   For example : the best seller model: YK-111-3.
   (1) Refrigeration Ton: 6RT.
   (2) Outside dimension: L 350 cm × W 135 cm × H 258 cm.
   (3) Temperature range: +20°C ~ +50°C.
   (4) Disposed capacity: 150~240kg, depend on different material.
   (5) Disposal time: depends on different material, thickness, temperature setting.
   (6) Power consumption: 15KW.
   (7) Cart: 3.
   (8) Tray: 120 (Size: 62 cm × 48 cm × 1.8 cm)

5. Product Photo
WASTE RECYCLE

1. **Structure and Principle**
   Shredders are used to shred large wood wastes collected in urban cities into wooden blocks and if necessary, the blocks are shredded into mid-sized blocks by mid-sized shredders. Otherwise, the wooden blocks are directly shredded by fine shredders into fine and small debris for use as a type of fuel heating the boilers in place of petrol, thus lowering the heating cost. The wooden debris may also be used as fillings of the green wooden products.

2. **Purpose**
   (1) Turn the recycled wastes into environmentally friendly regenerated items.
   (2) Used as a type of fuel for boilers instead of high cost petrol or coal.

3. **Features**
   (1) High investment yield.
   (2) Ability to solve wood wastes in urban cities.
   (3) Ability to achieve a green environment and waste recycle.

4. **Product Photo**

![Product Photo](image-url)
REFRACTORY MATERIAL

1. Structure and Principle
   High-temperature kiln lining and insulation.

2. Purpose
   High-temperature kiln lining and insulation.

3. Features
   (1) Long equipment usage life.
   (2) Low energy loss.
   (3) Reasonable price.

4. Specifications and Functions
   (1) High-aluminum-content manufacturing: resistance against high temperature and corrosion, high machining.
   (2) Silicon carbon product manufacturing: excellent resistance against wear, chemical erosion, and high machining and thermal conduction.
   (3) Insulation product manufacturing: low thermal conduction, excellent thermal insulation.
MUNICIPAL/COUNTY INCINERATOR

1. **Structure and Principle**
   Stoker type incinerator for Co-gen. Municipal incinerator and county area incinerator.

2. **Purpose**
   General garbage and Industry garbage.

3. **Features**
   (1) Auto control system.
   (2) Recovery system as: Co-gen system, boiler, economizer, etc.
   (3) Recovery system of waste water.
   (4) Semi-Dry APCD system.
SLUDGE DRYER/INCINERATOR

1. Structure and Principle
   Recovery waste heat or steam to reduce moisture content.

2. Purpose
   Application for paper mill, steel mill, petrochemical plant, waste water treatment plant etc.

3. Features
   (1) Auto control system.
   (2) Site and center control.
   (3) Reduce moisture content below 10%.
   (4) Custom design to meet variable requirement.

4. Product Photo
INDUSTRIAL INCINERATOR

1. Structure and Principle

The waste material burned in PCC and the flue gas induced and burn out in SCC. Pyrolysis all toxic gas and organics.

2. Features

(1) Auto-control system.
(2) High efficiency of fuel consumption.
(3) No toxic and organics in emission.
(4) Low maintainance cost and operation easy.
(5) Investment cost low, high quality standard system.

3. Product Photo

[Image of 100 Ton/Day Rotary Kiln Incinerator]
SPECIAL INCINERATOR / ANIMAL INCINERATOR

1. Structure and Principle

(1) Pyrolysis to remove resin etc. to recovery precious metals.
(2) Plasma to remove special waste materials.
(3) Pyrolysis to remove radioactive waste materials.

2. Features

(1) Turn key job of catalyst Recovery precious metal system.
(2) Consultant job of plasma melting system job.
(3) Research job of Nuclear Radioactive waste material incinerator system.

3. Product Photo
WASTE LIQUID INCINERTOR

1. Structure and Principle
   (1) Operation in negative pressure and flue gas retention time SCC>2 secs.
   (2) Patent spray nozzle design.
   (3) Recuperator can remove whit smoke in stack and save water cost.
   (4) APCD equipment to control pollutant emission.

2. Purpose
   (1) Designed by different waste liquid.
   (2) Strickly meet EPA standard.
   (3) Auto-control system.
   (4) Special design of APCD system to meet different waste fluid.

3. Features
   (1) Custom design to high corrosion, viscosity fluid.
   (2) High Efficiency, easy operation, easy maintenance.
   (3) Investment and operation cost low.
   (4) Limited land layout, High handling capacity.

4. Specifications and Functions
   (1) Incineration Capacity: 50~1000kg/hr(H.V. 600~9000Kcal/Kg).
   (2) Incineration Temperature:Primary combustion chamber Tamp. 500~800℃.
       2ed. combustion chamber Temp 850~1000℃, retention time >2sec.
   (3) Emission STD.:
       A. particulate < 180 mg/Nm3.
       B. SOx: < 180 mg/Nm3.
       C. NOx: < 180ppm.
       D. CO: < 220ppm.
       E. Opacity: < 20%

5. Product Photo

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TEL : +886-2-2228-8196  FAX : +886-2-2228-8190
E-mail : gh7741@ms8.hinet.net  http://www.greathonor.net
CONTAMINATED/HOSPITAL INCINERATOR

1. Structure and Principle
   Paralysis system incinerator for contaminated (hospital) waste material.
   The burning temp. over 1,000°C.

2. Purpose
   Treated for contaminated waste material of hospital, quarantine etc…

3. Features
   (1) Pyrolysis incineration, burn out efficiency higher than 99.99%.
   (2) Controlled air operated system, prevent air leakage to fully burn out.
   (3) Huge body waste material can directly feed in the system.
   (4) Auto furnace bed to recycle operated.

4. Product Photo

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E-mail: gh7741@ms8.hinet.net  http://www.greathonor.net
FLUE GAS DESULFURIZATION （FGD）

1. Structure and Principle

   The FGD reaction chemistry
   \[ \text{Ca(OH)}_2 + \text{SO}_2 \rightarrow \text{CaSO}_3 \cdot \frac{1}{2} \text{H}_2\text{O} + \frac{1}{2} \text{H}_2\text{O} \]

2. Purpose

   (1) Demonstrate SO\(_2\) removal in excess of 90 percent using high-sulfur bituminous coal.
   (2) Optimize recycles and design parameters to achieve maximum efficiencies of lime utilization and SO\(_2\) removal.

3. Features

   Lime Consumption
   The lime reagent ratio is expressed in terms of moles of calcium per mole of SO\(_2\) in the flue gas entering the system. This figure is also referred to as the calcium/sulfur molar ratio. Since the FGD system can operate at low ASTs, it can achieve high SO\(_2\) removal efficiencies with a low level of lime consumption.

4. Specifications and Functions

   (1) FGD yields a byproduct with less than 1 percent moisture, that can be easily disposed of or converted to a low grade cement.
   (2) The spray nozzle assembly can be replaced without interrupting the operation.

5. Product Photo

   ![Product Photo](image-url)
SMALL SCALE WASTE INCINERATOR

1. **Structure and Principle**
   Water-Cooling the crematory mixes using the turbulent flow, Facilitates completely burns achieves the smokeless not smelly effect. Small crematory in view of present enterprise reject more universal packing material, reverted, guarantees styrofoam, but designs may high calorific value of energy sufficient share use the above reject release to goal of the complete burning.

2. **Purpose**
   The cremated processing coating, the sludge, the lumber, the kitchen -odd, the reverted, the rubber, guarantee styrofoam, soaks the cotton and kapok and so on to be ordinary or the enterprise reject.

3. **Features**
   (1) Easy to prate, manpower saving and no danger.
   (2) Complete combustion, no smoke and odor.
   (3) Discharge value is assured to meet the standard specification.
   (4) Recovery large capacity of hot water, steam vapor.
   (5) Stand-type design, only small space required.
   (6) High perform an of incineration to be more than 99%.

4. **Specifications and Functions**
   The specification according to the field operation environment, the reject nature, the quantity makes the different design.

Product Photo
CONTROLLED AIR INCINERATION SYSTEM

1. Structure and Principle

The waste material is decomposed in the incinerator’s primary chamber as starved-air combustion. Smoke and gases produced in the primary chamber are routed to secondary chamber where there are completely oxidized under conditions of high temperature and fully turbulence to ensure the flue gas without any harm and odor.

2. Purpose

Hospitals and Clinics. Industrial plants. Veterinary facilities, Industrial waste treatment plants

3. Features

(1) Fully automatic control to save the manpower.
(2) Low primary chamber hearth loading resulting in excellent ash quality.
(3) module design; Easy to install.
(4) High fuel efficiency; Auxiliary fuel option.

4. Product Photo
ALL-PURPOSE INCINERATOR

1. **Structure and Principle**
   Adopting ox-reserve combustion theory, this system inducts flow to the second combustion chamber for recombustion and control temperature by burning off redundant fuel to achieve full incineration. Used with a filter facility, this system is completed with three functions - incineration, filtering, and pollution control. The 3-in-1 feature enables space efficiency.

2. **Purpose**
   (1) General waste: mix rubbish from communities, offices and kitchen, etc.
   (2) Business waste: including packaging materials, separation sheets, plastics, etc.

3. **Features**
   (1) Complete incineration, no smoke or odor.
   (2) Unique reverse high-temperature incineration.
   (3) Low maintenance costs and long product life.

4. **Specifications and Functions**
   (1) Combustion capacity: 800kg/8hr.
   (2) Outer dimension: 3,635mmx2,190mmx2,130mm.
   (3) Feed opening size: 1,420mmx600mm.
   (4) Grate surface: 1.8m².
   (5) Combustion chamber size: 1.7m³.
   (6) Total height including stack: 5,000mm.
   (7) Motor power requirement: one motor of 3 phase, 222v, 5hp.
Waste Treatment and Recycling Equipment  
General Incinerator Equipment

PH TYPE — HORIZONTAL INCINERATOR

1. Structure and Principle
   (1) Constructed by water-cooled horizontal double-wall steel plates—cooling water flows through the inner cylinder and outer sleeve protecting inner wall from being burnt out by elevated temperature; as well as heat up water flow for another application.
   (2) Forced ventilation — most air jet nozzles are injected in high speed that can enhance the diffusion effort of oxygen in combustion gas and air and make smokeless incineration.
   (3) Plane furnace bed—free from the use of conventional furnace bed; Suitable for the feature of burning plastics (melted and drops down to be burned dispersedly).
   (4) High efficiency dry dust collection device — apply high-efficiency cyclone separator or multi-clone; the dust filtering result can be lower than 0.2g/Nm3.
   (5) High-efficiency wet dust collection device — apply the baffle scrubber developed by our company, very effective to remove toxic gas and coal dust.
   (6) Effective deodorization — by uniform temperature inflammation, most odor components are decomposed (most of odor components will be decomposed at 700℃), no odor left.
   (7) Circulated flow under combustion—gas stream flows in circulation to burn completely by sufficient combustion time.
   (8) No aux combustion fuel required.
   (9) Automatically feed waste.
   (10) Make continuous incineration — no dust generated, able to burn waster for 24 hours continuously.

RYOSEI ENVIRONMENTAL INDUSTRIAL CO., LTD.
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8-3F., No.191, Sec. 2, Zhongyang Rd., Tucheng Dist., New Taipei City, Taiwan
TEL : +886-2-2381-1668     FAX : +886-2-2371-2769
E-mail : ryosei7603@yahoo.com.tw     http : // www.twimc.com.tw
2. **Purpose**

This equipment mainly is applied to handle general waste; it uses unique wet dust collecting device to remove toxic gases; and applies special incinerating equipment to incinerate waste oil, solvent and liquid.

3. **Feature**

(1) Completely smoke-free.
(2) Purify toxic gas.
(3) Easy to maintain and manage.
(4) No second environmental pollution made.
(5) Equipped with feeding equipment.
(6) Strong construction.
(7) Can entirely remove coal dust.
(8) Apply the waste heat generated from incineration.
(9) Easy to change operation datum.

4. **Product Photo**

PH-C 型
PI TYPE — INCLINED INCINERATOR

1. Structure and Principle
(1) On particular fit for plastics incineration – even for the hydrocarbon plastics that is easy generating coal components can be completely burnt out continually by the most suitable temperature and air diffusion effect. Airflow adjusting damper is equipped to adequately adjust the excess air in the combustion process.
(2) Constructed by water-cooled inclined double-wall steel plates—the unique inclining structure is suitable to incinerate polymer waste.
(3) Inclination can be processed while feeding door is open.
(4) Forced ventilation.
(5) Plane furnace bed
(6) High efficiency dry dust collection device
(7) High-efficiency wet dust collection device
(8) Effective deodorization
(9) Circulated flow under combustion.
(10) No aux combustion fuel required.
(11) Small size — reduce installation space and easy for operation.
(12) Can combine waste oil. Solvent or liquid into incineration process — by using the special incineration equipment supplied.

2. Purpose
Unique water-cooled inclined incinerator under our R&D effort that has sufficiently considered the feature of plastics incineration in design.

3. Feature
(1) Completely smoke-free.
(2) Purify toxic gas.
(3) Easy to maintain and manage.
(4) No second environmental pollution made.
(5) Equipped with feeding equipment.
(6) Strong construction.
(7) Can entirely remove coal dust.
(8) Apply the waste heat generated from incineration.
(9) Easy to change operation datum.

4. Product Photo

[PI-C 型]

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TEL : +886-2-2381-1668  FAX : +886-2-2371-2769
E-mail : ryosei7603@yahoo.com.tw  http : // www.twimc.com.tw
HEAT-RECYCLE BOILER & INCINERATOR–SH-C TYPE

1. Structure and Principle

(1) Feed constant volume of waste from lorry or crane, which is automatically pressed into the incinerator.

(2) Air spouts fitted around the combustion chamber blows in air at high speed, creating swirls for complete combustion of high-molecular wastes and deodorization simultaneously.

(3) The combustion chamber is also lined with evaporation pipelines, which absorb the chamber heat; flue gas circulates twice in the chamber then dissipates through the pipelines to the outlet, which is fitted with filters to screen off particles at the air holes.

2. Purpose

Applicable for incinerating wastes including general refuse, plastic, rubber, fuel, solvent.

3. Features

(1) Horizontal grate.

(2) Forced ventilation.

(3) Can be fitted with ash collection system.

(4) High-performance filter system.

(5) Capable of deodorization.

(6) Produce swirl and combustion.

(7) Accept mixture with used fuel and solvent.

(8) Capable of accelerated operation.
## 4. Specifications and Functions

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>SH-100C</th>
<th>SH-150C</th>
<th>SH-200C</th>
<th>SH-250C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability (kg/hr)</td>
<td></td>
<td>80 ~150</td>
<td>120 ~225</td>
<td>160 ~300</td>
<td>200 ~375</td>
</tr>
<tr>
<td>Chamber Size</td>
<td>W (mm)</td>
<td>1,750</td>
<td>1,900</td>
<td>2,000</td>
<td>2,100</td>
</tr>
<tr>
<td></td>
<td>H (mm)</td>
<td>2,700</td>
<td>2,900</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td></td>
<td>L (mm)</td>
<td>3,700</td>
<td>5,000</td>
<td>6,100</td>
<td>6,500</td>
</tr>
<tr>
<td>Heat Conduct Surface (m²)</td>
<td></td>
<td>29.5</td>
<td>45</td>
<td>60</td>
<td>64.75</td>
</tr>
<tr>
<td>Converted evaporation volume (kg/hr)</td>
<td></td>
<td>750 ~1,000</td>
<td>1,200 ~1,500</td>
<td>1,500 ~2,000</td>
<td>1,800 ~2,500</td>
</tr>
<tr>
<td>Max Pressure (kg/cm²G)</td>
<td></td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Supply fan (kw × P)</td>
<td></td>
<td>5.5 ×4</td>
<td>7.5 ×4</td>
<td>11 ×4</td>
<td>15 ×4</td>
</tr>
<tr>
<td>Drain Fan (kw × P)</td>
<td></td>
<td>11 ×4</td>
<td>15 ×4</td>
<td>22 ×4</td>
<td>30 ×4</td>
</tr>
<tr>
<td>Feed Opening W (mm) × H (mm)</td>
<td></td>
<td>700 ×500</td>
<td>700 ×500</td>
<td>1,000 ×650</td>
<td>1,000 ×650</td>
</tr>
<tr>
<td>Feeder Size</td>
<td>W (mm)</td>
<td>800</td>
<td>800</td>
<td>1,100</td>
<td>1,100</td>
</tr>
<tr>
<td></td>
<td>H (mm)</td>
<td>1,250</td>
<td>1,250</td>
<td>1,300</td>
<td>1,300</td>
</tr>
<tr>
<td></td>
<td>L (mm)</td>
<td>3,650</td>
<td>3,650</td>
<td>4,300</td>
<td>4,300</td>
</tr>
<tr>
<td>Feeder Capacity (m³)</td>
<td></td>
<td>0.25</td>
<td>0.25</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Filter Size</td>
<td>Diameter (mm) × Unit</td>
<td>840 ×1</td>
<td>960 ×1</td>
<td>840 ×2</td>
<td>960 ×2</td>
</tr>
<tr>
<td></td>
<td>H (mm)</td>
<td>4,550</td>
<td>4,800</td>
<td>5,200</td>
<td>5,200</td>
</tr>
<tr>
<td>Stack Height (mm)</td>
<td></td>
<td>6,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12,000</td>
<td>15,000</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Supply Pump l/Hr (10kg × cm²G) × kw × Unit</td>
<td>1,450 ×1.5 ×2</td>
<td>2,800 ×2.2 ×2</td>
<td>2,800 ×2.2 ×2</td>
<td>4,800 ×3.7 ×2</td>
<td></td>
</tr>
<tr>
<td>Soft Water Capacity m³/Hr (4°dH)</td>
<td></td>
<td>1.5</td>
<td>2.5</td>
<td>2.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Vessel Volume L (mm)</td>
<td></td>
<td>1,000</td>
<td>1,500</td>
<td>2,000</td>
<td>2,500</td>
</tr>
<tr>
<td>Installation Space Total W (m)</td>
<td></td>
<td>6</td>
<td>6.5</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Total L (m)</td>
<td>17</td>
<td>18.5</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Rough Body Weight (no water)</td>
<td></td>
<td>9</td>
<td>15</td>
<td>17</td>
<td>19</td>
</tr>
</tbody>
</table>
WATER-COOLING SMOKE-FREE INCINERATOR

1. Structure and Principle
   (1) Heat and composition properties of wastes are assessed before designing the combustion chamber based on theory and practice (by 3T principle) to achieve smoke-free, odor-free incineration; the backend-discharged heat is injected through flue-gas boiler or otherwise treated before releasing into the atmosphere.
   (2) Feed system → incinerator proper → flue → filter → stack: By using refuse’s own heat released during combustion to create high-temperature state, it further gasifies organics. The combustion temperature is maintained in the range of 800~1000 °C. Refuse is burned in the incinerator for a suitable duration and further aided by high-velocity wind to attain complete combustion.

2. Purpose
   (1) Business wastes: rubber, plastic, Styrofoam, acrylic, foam, adhesive tape, PU, PE, EVA, PET, fiber nylon, cloth, non-woven, resin, plywood, leather, scrub, paint, sludge, etc.
   (2) General wastes: paper category, wood shavings, leaves, kitchen remains.

3. Features
   (1) Professional design and manufacture.
   (2) Simple operation, labor saving, no danger.
   (3) Complete combustion, order and smoke free.
   (4) Guaranteed to comply with legal emission standards.
   (5) Significant recycle of hot water and steam.
   (6) Low cost.
   (7) Small equipment space.
   (8) Capacity of 10~5,000 kg/hr and wide verities.
   (9) High incineration rate of over 99.5%.

4. Product Photo

NEW FACE ENVIRONMENTAL DEVELOPMENT CO., LTD.

NEW FACE ENVIRONMENTAL DEVELOPMENT CO., LTD.

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E-mail: newface@ms19.hinet.net  http://www.nface.com.tw
Waste Treatment and Recycling Equipment
General Incinerator Equipment

ROTARY INCINERATOR

1. Structure and Principle
   (1) U-rotary combustion (patented)
   A. Labour-saving design.
   B. No additional post-burner.
   C. Multi-function unit: evaporate, dry and incinerate (energy-saving structure).
   D. Even temperature for stable combustion (high-temperature).
   E. High-temperature combustion (over 900°C).
   F. Smoke, odor free complete combustion.
   (2) Cone chamber (patented)
   A. Capable of burning refractory wastes.
   B. Capable of treating liquids, liquid forms.
   C. Capable of burning high moisture content wastes (high aching efficacy).
   D. Reduce organic waste to under 5% ash.
   E. Reduce waste to under 1% residue (simplified chamber structure).
   (3) Sandwich combustion technology (patented)
   A. Superior processing capability.
   B. As waste heats up inwardly, the combustion efficiency is increased.
   C. Capable of incinerating high moisture content waste in short time.
   (4) Auto feed, ash collection systems (patented)
   A. Continuous operation.
   B. 24-hour continuous operation.
   C. Fully automated, requiring no manual operation (improve working environment).
   D. No need for mixing chamber wastes.
   E. Fully automated ash collection, requiring no manual operation.

NEW FACE ENVIRONMENTAL DEVELOPMENT CO., LTD.

新國環境開發股份有限公司

NEW FACE ENVIRONMENTAL DEVELOPMENT CO., LTD.

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TEL : +886-3-363-3135   FAX : +886-3-363-3215
E-mail : newface@ms19.hinet.net   http://www.nface.com.tw
2. **Purpose**

<table>
<thead>
<tr>
<th>High-tech related</th>
<th>Chemical related</th>
<th>Medical related</th>
<th>Food related</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>• PCB</td>
<td>• Petrochemical raw material processing</td>
<td>• Hospitals, clinics, test centers</td>
<td>• Food processing</td>
<td>• Papermaking</td>
</tr>
<tr>
<td>• Electroplating industry</td>
<td>• Dye industry</td>
<td>• Pharmaceutical manufacturing</td>
<td>• Manufacturing</td>
<td>• Leather processing</td>
</tr>
</tbody>
</table>

3. **Features**

(1) The rotary chamber promotes complete combustion of high-water-content sludge (pending on its properties).

(2) Press “start” button for simple, safe operation, equipped with automated ash collection system, feed system, rotation, combustion and acceleration.

(3) Combustion temperature is automatically controlled for stability, which enables smokeless incineration and deodorization via high temperature.

4. **Product Photo**

![Product Photo](image_url)

5. **Award (Certified) Items**

Industrial Development Bureau of MOEA certified the product for environmental protection quality standard in 2002.
INCINERATOR FACILITY

1. Structure and Principle
   For waste treatment of various types of factory, hospital, campsite, school, scenic area, waste disposal service industry, restaurant, community.

2. Purpose
   (1) Combustion chamber can be designed according to the types of wastes.
   (2) Complete compliance with emission standards by law.
   (3) Fully automatic control system.
   (4) Incinerator’s backend air pollution prevention equipment can be selected for specific systems.

3. Features
   (1) Fix Bed Incinerator.
   (2) Rotary Kiln Incinerator.
   (3) Fluidized Bed Incinerator.
   (4) Coating Product Incinerator

4. Product Photo
   Packaged Small-scale Incineration System
   Capacity: 500kg/hr
FERMENTATION / FLY ASH SOLIFICATION SYSTEM

1. Structure and Principle

   Fermentation system to handle kitchen waste or other organic waste material.

2. Purpose

   Organic waste material fermentation system convert to ferterlize.

3. Features

   (1) Efficiency to handle organic waste material.
   (2) Huge handling capacity.
   (3) Safety and sanitation.
   (4) Simple operation.

4. Product Photo
ORGANIC REFUSE PROCESSOR

1. Structure and Principle
   (1) Structure
   A. Machine frame and chromed parts are all made of SUS#304 grade stainless steel; external parts are sandblasted.
   B. Dual-loop stirrer
   C. Driver mechanisms include motor and decelerator
   D. Inner tank heating format
   E. High-temperature deodorizer
   F. Power control system
   (2) Principle
   Introduce microorganisms into an environment with humidity and temperature propitious to enable organism growth for organic waste decomposition. Water and gases produced are channeled through the deodorizer before release to achieve the purpose of minimizing organic waste.

2. Purpose
   In closed treatment tank organic refuse are quickly fermented or decomposed to meet with environmental protection and sanitary requirements; the organic fertilizer thus produced may be mixed with soil for organic farming.

3. Features
   (1) Combine fermentation and bulk reduction into one machine.
   (2) Except for the motor and decelerator, the entire unit is made of SUS304 grade stainless steel.
   (3) Dual-loop stirrer can effectively chop up organic waste and offers additional benefits of even blending, efficient and fast treatment.
   (4) The electric fuel tank is heated, offering long insulation time to save power.
   (5) Auto thermometer and adjustable temperature display.
   (6) Gas release control by section for tank humidity adjustment.
   (7) High-temperature deodorizer.
   (8) Modularized machine body for convenient maintenance.
   (9) Electrically controlled discharger.
   (10) Safety protection devices: power leak cutoff; open feed cover suspends operation; stirrer stuck prevention; motor overload protection.

4. Specifications and Functions
   (1) Power supply: 220V, 3-phsae (or local 3-phase requirement).
   (2) Tank capacity: currently available in 250, 500, and 750 liter models.

5. Product Photo

飛鴻生物科技環保工程股份有限公司

FEHONG TECHNOLOGY CORPORATION
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TEL: +886-2-2696-9123  FAX: +886-2-2696-3866  E-mail: biorich@seed.net.tw  http://www.biorich.com.tw
THE AUTOMATIC TECHNOLOGY OF TREATING ORGANIC WASTE

1. Structure and Principle

(1) Shattering system
Function: Organic wastes are transferred or fed into a highly effective shattering system to shatter the material into smaller pieces to inc recharge the reactive surface.

(2) Heated oil-water separation system
Function: Heated oil-water separation system is used to separate oil from water and then remove the oil from the slurry.

(3) Decomposing system
Function: Microbial enzymes and other adjusted materials are used for the decomposing reaction. In addition, the pealing is used to speed up the decomposing reaction and to limit the reaction time to 6 hours.

(4) Heating system
Function: Heat can be transferred rapidly and stably by a circulatory airtight heating system fueled by kerosene.

(5) Compressed exhausting system for water
Function: The steam from heat decomposing system will be compressed into water.

(6) Recycling products
Function: For increasing the added values, the products can be adjusted in different formula according to produce according to the needs of consumers.

2. Purpose
Treating Organic Wast

3. Features
Rapid process (3~8 hours) with high efficiency, and low in energy consumption.
Small footprint with space saving only requires 1800 square feet for 2.5 tons of waste processing.
No secondary pollution in wastewater, environmental pollutants, unfavorable odors, and poisons.
Easy to operate with fully automation.

4. Product Photo
1. **Structure and Principle**

Reycling: After processing the refrigerator in the disintegrator, the R-11 refrigerant contained in the foam is guided into the liquid recycling machine through the wind draft at the entrance, and then sent into the energy-saving system, where the outward cold wind and the inward hot wind perform heat exchange to accomplish energy saving; heat exchange is performed via condensation, which is then sent back into the recycling tank for the second recycling process. The wind after processing will enter the active carbon tank for absorption and emission after being heated by the energy-saving heating system.

Desorption: The wind draft and the steam propel the air to pass through the system via the active carbon tank, where the recycled refrigerant is sent into the separating system for separation, and then condensed into purified Freon for storage.

Drying: After the active carbon tank desorption, then treat and reduct activated carbon adsorption function through the specially-made drying system, extend the service life of activated carbon.

2. **Purpose**

Handles refrigerator’s heat insulating foam refrigerant

Applicable to waste home appliances (refrigerator)

3. **Features**

(1) The whole recycling system uses SUS-304 stainless steels, which is durable and will never rust or corrode.

(2) It's thoughtfully-designed and more convenient for you to maintain and to replace activated carbon, reduce the time cost.

(3) Liquefy Freon by condensation system, and then purify the recycled Refrigerant, make them more pure.

(4) PLC automatic controlling system, real-time monitoring, quick maintenance, saves time and labor both.

(5) Equipped with energy-saving heat exchanger which is environmentally friendly and helps with energy conservation and carbon emissions reduction.

(6) Professional design and manufacture, convenient maintenance, and not easily damaged.

(7) The simultaneous process of recovery and desorption helps to save time and double efficiency.

(8) Refrigerant recovery has a efficiency of more than 95%.
REFRIGERANT RECYCLING EQUIPMENT
FR-999

1. Structure and Principle
   (1) Once the recycle process is finished, machine will stop, unload automatically.
   (2) During recycle process that impurity, vapor, oil air, acid material can be separated and exhausted automatically.
   (3) Special regeneration treatment system, using the latest distillation of refrigerant processing technology, the quality of recycled refrigerant is more pure.
   (4) Liquid Storage Tank, Oil Separator and Heat Exchanger are made of galvanized iron material to guarantee rust-free and longer life of Recovering Equipment.

2. Purpose
   (1) Recycle refrigerant of air conditioning, refrigerator and automotive. (R-22, R-12, R-134a)
   (2) Appliance Sites:
      A. Waste home appliances, automobiles, refrigerant recycling plants.
      B. Large Refrigeration and air conditioning repair assembly plant.
      C. The refrigerant-packing plants.

3. Features
   (1) Simple operation, just need to turn on the machine to work.
   (2) Three-stage - vacuum recovery, recycling, purification.
   (3) Auto-exhausting and dewatering devices, Manual and automatic emptying devices.
   (4) Recycling process, the impurities, water, oil, acid separated out side by side, the air will be discharged automatically.
   (5) Liquid storage tank, oil separators and heat exchangers all use Stainless material, never rust, lengthen the life span of recycling machines.
   (6) Equipped with senior globe valve switch and a number of protection measures, strong and safe, the machine would be more durable.
   (7) Equipped with automatic compressor cooling device, it can be used to protect the compressor operation from overheating damage even for a long time using.
   (8) Equipped with lubricator, make oil change more convenient.
   (9) Suitable for a long time operation, refrigerant purification, trace of refrigerant recovery, quick recovery.
TITANIUM EQUIPMENT – TITANIUM HEAT EXCHANGERS, STORAGE TANK, A VARIETY OF TOWER TYPE, KETTLE-TYPE, REACTOR, MMO ANODE

1. Structure and Principle

2. Purpose
   Petroleum industry, chemical engineer, pharmaceutical, Chlor-Alkali chlorate electrolytic tank, chemical fertilizer, electroplating, spend recovery equipment.

3. Features
   Provided with powerful technical force, compete and adequate processing equipment, superior detecting means and advanced manufacturing technology.

4. Product Photo
Overview of Environmental Pollution Control
Instrument and Related Equipment

Any machinery must be related to instrumentation and electricity. There is no exception for environmental protection equipment. The environmental protection equipment equipped with instrumentation and control will elaborate its functions and process “intelligence” and have more add-on values.

I. Instrumentation and Control Equipment

Instrumentation and control have been extensively used for control as well as for monitoring, and recording. In other words, any instruments capable of performing monitoring and control are considered as instrument and control. Through the normal operation of instrument and control equipment, one can easily collect the various information and variables of a process for analysis and determination. The instrument and control to a system is like brain and nerve system to the body. The sensing portion is monitoring and the reaction is controlling. It is also like the monitoring gauges and instruments in an automobile. Regardless of how the function of the car is, the control is indispensable equipment to the driver.

In order to achieve the objective of monitoring and control, the basic components of instrumentation and control consists of (1) measuring element: sensor and transmitter, (2) deviation detector: the controller that compares the information received to the expected value and send out the control signal to the final control element, and (3) final control element: receiving the signal to alter the input to a process, e.g. control valve and frequency alternator, etc.
There are numerous categories of instrument and control equipment. The commonly-used instrument and control equipment in environmental protection and control are listed in Table 1.

II. Accessories

Commonly used accessories include sampling, chemical addition, control values and parts and depleted materials.

Table 1: Commonly Used Instrument and Control Equipment in Environmental Protection

<table>
<thead>
<tr>
<th>Item</th>
<th>Commodity Name</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Thermometer, Temperature Control</td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>Hygrometer</td>
<td></td>
</tr>
<tr>
<td>Pressure</td>
<td>Pressure Meter、Vacuum Meter</td>
<td></td>
</tr>
<tr>
<td>Liquid Level</td>
<td>Ball Valve, Hydrostatic Pressure Liquid Level Indicator, Magnetic Float Liquid Level Indicator</td>
<td></td>
</tr>
<tr>
<td>Flow Rate</td>
<td>Float, Flows the orifice, Venturi tube, Supersonic wave, Batardeau, (hot line) anemometer Float, Flows the orifice, Venturi Flow Meter, Supersonic, Weir, (Hot Wiree) Wind Gauge</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Load Cell</td>
<td></td>
</tr>
<tr>
<td>Torque</td>
<td>Torsion killer、Maximum Torqu Limite, Torque Switch</td>
<td></td>
</tr>
<tr>
<td>Revolving Speed</td>
<td>Tachometer</td>
<td></td>
</tr>
<tr>
<td>Vibration</td>
<td>Vibrometer</td>
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<tr>
<td>Noise</td>
<td>Noise Meter</td>
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</tr>
<tr>
<td>Quantity</td>
<td>Flow Control Pump, Chemical Dosing Pump, Sampling Pump</td>
<td></td>
</tr>
<tr>
<td>Time/Procedure/</td>
<td>Timer, Programmable Controller</td>
<td></td>
</tr>
<tr>
<td>Logic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Commodity Name</td>
<td>Remark</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------------------------------------</td>
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<tr>
<td>Specific Gravity</td>
<td>Densitometer</td>
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<tr>
<td>pH</td>
<td>pH Meter</td>
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<td>ORP</td>
<td>ORP Meter</td>
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<tr>
<td>Conductivity</td>
<td>Conductivity Meter</td>
<td>Water quality target</td>
</tr>
<tr>
<td>Turbidity</td>
<td>Turbidity Meter</td>
<td>Original water target</td>
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<tr>
<td>Sludge Concentration</td>
<td>Sludge Concentration Meter</td>
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</tr>
<tr>
<td>Interface</td>
<td>Interface Meter, Sludge Interface Meter</td>
<td></td>
</tr>
<tr>
<td>DO</td>
<td>DO Meter</td>
<td></td>
</tr>
<tr>
<td>Water-Borne Grease and Oil</td>
<td>Water-Borne Grease &amp; Oil Analyzer</td>
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<tr>
<td>Total solid dissolution quantity</td>
<td>Total Dissolved Solid Meter</td>
<td></td>
</tr>
<tr>
<td>Total Carbon</td>
<td>HC analyzer, Total Organic Carbon Analyzer</td>
<td></td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>Total Nitrogen Analyzer</td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>Total Phosphorus Analyzer</td>
<td></td>
</tr>
<tr>
<td>COD</td>
<td>COD Analyzer</td>
<td></td>
</tr>
<tr>
<td>Residual Chlorine</td>
<td>Residual Chlorine Monitor, Effective Chlorine Concentration Meter</td>
<td>On-line the gas phase chromatographic analysis meter only then may supply using of the monitoring</td>
</tr>
<tr>
<td>Chemical Composition</td>
<td>Gas Chromatography, Spectrophotometer, Photo -ionic Detector, Flame Ionic Detector</td>
<td></td>
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<tr>
<td>Metal Composition</td>
<td>Atomic Absorption</td>
<td>On-line the product is rare</td>
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<tr>
<td>VOCs</td>
<td>VOC Detector, Photo Ionic Detector, Flame Ionic Detector</td>
<td></td>
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<tr>
<td>Oxygen (Residual Oxygen)</td>
<td>Oxygen Detector, (Excess Air) Incineration Efficiency Analyzer</td>
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<tr>
<td>Oxygen</td>
<td>Oxygen Detector, Oxygen Deficiency Detector, Oxygen Analyzer</td>
<td></td>
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</tbody>
</table>

Table 1 : Commonly Used Instrument and Control Equipment in Environmental Protection
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<thead>
<tr>
<th>Item</th>
<th>Commodity Name</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>Ozone Detector</td>
<td></td>
</tr>
<tr>
<td>Atmospheric Quality Detector</td>
<td>Air Quality Monitoring Device (Generally Including SO₂, CO, O₃, NO₂, HC, PSI)</td>
<td></td>
</tr>
<tr>
<td>Indoor Air Quality</td>
<td>Carbon Dioxide Detector, Odor Detector, VOCs Detector</td>
<td></td>
</tr>
<tr>
<td>Flue Gas</td>
<td>Emission Gas Analyzer (Usually Including O₂, CO₂, CO, HC, SOₓ, NOₓ)</td>
<td></td>
</tr>
<tr>
<td>Combustible Gas</td>
<td>Combustible Gas Detector, Methane Detector</td>
<td></td>
</tr>
<tr>
<td>Toxic Gas</td>
<td>Carbon Monoxide Detector, Sulfur Hydrogen Detector, Chlorine Gas Detector</td>
<td></td>
</tr>
<tr>
<td>Particle</td>
<td>Powder Meter, Particle Analyzer</td>
<td></td>
</tr>
</tbody>
</table>
PORTABLE GAS DETECTOR

1. Structure and Principle
   Sensors are selected in accordance to the characteristic the gas and worksite, such as semiconductor sensors, electrochemical sensors or Non-dispersive Infrared (NDIR) and so on, integrated into the portable gas Detector modules.

2. Purpose
   (1) GT200 series can be used to detect carbon monoxide, methane, hydrogen sulfide and oxygen.
   (2) GT300-AQ/VOC air quality detector. General targets are Hydrocarbon Compounds, Smoke, Odor. GT300-AQ has high sensitive in Hydrogen.
   (3) GT220N model is suitable for detecting carbon dioxide.
   (4) GT500-NH3 models can be used to detect ammonia.

3. Features
   (1) Durable: The sensor has a durability of 2~3 years under normal use.
   (2) Economical: The cost is approximately 1/2 of traditional detector.

4. Specifications and Functions
   (1) General specifications: audible alarm and message backlight alphanumeric LCD, Dimensions: 131mm×46mm×25.5mm, Weight about 135g, Built-in 2,000mAH rechargeable lithium-ion battery.
   (2) Targets and Range of GT200-3G: carbon monoxide 0 ppm to 600 ppm, methane 0 ppm to 700 ppm, oxygen 3.0 vol % to 25.0 vol %.
   (3) GTF300-AQ/VOC, air quality detector; range: 1-200 CIAQ.
   (4) Targets and Range of GT220N: Carbon dioxide 0 ppm to 8,000 ppm.
   (5) Targets and Range of GT500-NH3: Ammonia 0 ppm to 150 ppm.

5. Product Photo

育強科技股份有限公司  GASTECH CO., LTD.
新北市深坑區北深路三段 155 巷 7 號 9 樓
9F, No.7, Ln. 155, Sec. 3, Peishen Rd., Shenkeng District., New Taipei City, Taiwan
WALL-MOUNT TYPE GAS DETECTOR

1. Structure and Principle
Sensors are selected in accordance to the characteristic of gas and worksite, such as semiconductor sensors, electrochemical sensors or Non-dispersive Infrared (NDIR), Photo Ionization Detectors (PID) and so on, incorporated into wall-mount type gas detector modules.

2. Purpose

(1) GTF200 series of models can be used to detect carbon monoxide, methane, hydrogen sulfide and oxygen.

(2) GTF300-AQ, air quality detector. General targets are Hydrocarbon Compounds, Smoke, Odor and high sensitive gas is Hydrogen.

(3) GTF300-VOC, air quality detector. General targets are Hydrocarbon Compounds, Smoke, Odor and high sensitive are Ammonia, Toluene and Hydrogen sulfide.

(4) GTF220N, carbon dioxide detector.

(5) GTF400 series can be used to detect chlorine, sulfur dioxide.

(6) GTF500 series can be used to detect CFCs, HFCs and ammonia.

(7) GTF600 series can be used to detect various oxygen concentrations.

(8) GTF700 series can be used to detect hydrocarbons and TVOC.

3. Features

(1) Durable: The sensor has a durability of 2~3 years under normal use.

(2) Economical: The cost is approximately 1/2 of traditional detector.

4. Specifications and Functions

(1) General spec: Highly safe with IP65 enclosure design for aluminum alloy casing, sensor housing and buzzer housing, standard type offers precision current loop 4~20 mA or optional relay output, audible alarm and message, backlight alphanumeric LCD, Dimensions: 193 mm×91 mm×40 mm, Weight about 700g.
All this category oxygen detector, range: 0 ~ 25.0 / 1 ~ 96 vol %.

(3) GTF200-CO, carbon monoxide detector, range: 0-250ppm (standard), optional 0-999ppm.

(4) GTF200-FL, flammable gases detector, range: 1.00-40.00%LEL (methane base, standard model), optional 1.0-100.0%LEL.

(5) Specified gas of flammable gases detector, which are available for Hydrogen, Toluene, Acetylene, etc.

(6) Specified hydrogen detector, range: 0-2,000ppm. There is no sensitivity to the combustible gas.

(7) GTF300-AQ, air quality detector; range: 1-200 CIAQ.

(8) GTF300-VOC, air quality detector; range: 1-200 CIAQ.

(9) GTF200N, carbon dioxide detector, range: 0-8,000ppm.

(10) GTF400 series of models can be used to detect chlorine, sulfur dioxide, range: 0 ~ 20 ppm.

(11) GTF500 series can be used for R-12, R-22, R-134a, R-410a, R-407c, R-404a, range: 0 ~ 1,000 ppm. Or Ammonia, range: 0 ~ 150 ppm.

(12) GTF700 series can be used to detect hydrocarbons, range: 0 ~ 300 ppm.

5. Product Photo
GAS ANALYZER

1. Structure and Principle
   Sensors are selected in accordance to the characteristic of gas and worksite, such as semiconductor sensors, electrochemical sensors or Non-dispersive Infrared (NDIR), Photo Ionization Detectors (PID) and so on, incorporated into analyzer module.

2. Purpose
   (1) GTF600/601/602/605, trace oxygen analyzer.
   (2) GTF220N, carbon dioxide analyzer.
   (3) GTF700 series can be used to detect hydrocarbons and TVOC.

3. Features
   (1) Durable: The sensor has a durability of 2~3 years under normal use.
   (2) Economical: The cost is approximately 1/2 of traditional analyzer.

4. Specifications and Functions
   (1) General spec: Highly safe and IP65 enclosure design with aluminum alloy casing and buzzer housing. Standard type offers precision current loop 4~20 mA, audible alarm and message, backlight alphanumeric LCD.
   (2) GTF600/601/602/605, trace oxygen analyzer, range: 10~1,000ppm/ 100~10,000ppm/ 200~20,000ppm/ 500~50,000ppm.
   (3) GTF220N, carbon dioxide analyzer; range: 0~8,000ppm / 0-100%.
   (4) GTF700-TVOC series can be used to detect hydrocarbons, range: 0 ~ 300 ppm.

5. Product Photo
   (Photo: food packaging specific oxygen analyzer)
PROPORTIONAL QUANTITY-CONSTANT CHLORINE-PILL BARREL

1. Structure and Principle
   (1) As the solvent surface in contact with water varies according to water volume, solvent adding is designed to adjust automatically according to the water input volume for economic and effective solvent utilization.
   (2) The solvent barrel is designed to deter clogging and erosion and does not require power supply.

2. Features
   (1) The barrel cylinder is made of PVC whereas the lid and bottom are made of ABS for durability, anti-clogging. It is inexpensive, functional and applicable.
   (2) The lid and the bottom are fabricated by one-piece molding without seams.

Product Photo

4. Specifications and Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>Height (cm)</th>
<th>Diameter (cm)</th>
<th>Effective Capacity (cm³)</th>
<th>Contact Surface (cm²)</th>
<th>Barrel Cylinder Material</th>
<th>Lid, Bottom Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-80</td>
<td>80</td>
<td>14</td>
<td>11,200</td>
<td>168</td>
<td>PVC</td>
<td>ABS</td>
</tr>
<tr>
<td>C-60</td>
<td>60</td>
<td>14</td>
<td>8,377</td>
<td>168</td>
<td>PVC</td>
<td>ABS</td>
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<tr>
<td>C-40</td>
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<td>14</td>
<td>5,556</td>
<td>168</td>
<td>PVC</td>
<td>ABS</td>
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</tbody>
</table>

大陸水工股份有限公司
CONTINENTAL WATER ENGINEERING CORP.
台北市承德路二段 137 號 12 樓之 4   12F-4, No. 137, Sec.2, Cheng Teh Rd., Taipei, Taiwan
TEL : +886-2-2553-6015 FAX : +886-2-2557-6553 E-mail : egg@ms22.hinet.net   http : //www.pollution.com.tw
Environmental Pollution Control Instrument and Related Equipment
Dosing, Metering Pump & Chemical Feeder

100% CHEMICAL-FREE WATER
PURIFICATION SYSTEM (Copper-Silver Ionization Water Disinfection System)

1. Structure and Principle
Concept
The Guen Young water purification system operates on the basis of the well-known oligo-dynamic principle through ions of the metals silver and copper.
The Guen Young module uses this well established principle, which not only ensures that an appropriate solution pressure of the metals is maintained but also creates a time-and power-controlled alternating current at the electrodes, which determines dosed emission of silver and copper ions. This system takes into account individual characteristics of the water to be processed - whether it is located indoor or outdoor, and whether it is hard or soft, this unit is a convenient and highly effective water purification system. It releases extremely low concentration (parts per million) of silver and copper ions based on your configuration.

2. Features
(1) Prevent Legionella Pneumophila and lime buildup.
(2) Simultaneous elimination of scale, germs and algae for improvement of water quality in cooling towers.
(3) 100% chemical free and minimal maintenance cost.
(4) Automatic flocculation.
(5) Produce water with neutral odor and color; water contains no irritants.
(6) Prolong usage life of the condenser in cooling tower.
(7) Environmental factor does not affect the water quality.

Product Photo
MAGNETIC VALVE

1. Structure and Principle

This magnetic valve is a compound device which replaces traditional mechanical valves such as ball and butterfly valves in many applications. It is activated by a small switch which moves when an electrical current is applied. The solenoid features thin wires coiled around an iron cylinder; within which, a metal plunger moves back and forth. When there is no electrical current, a spring holds the plunger in place. When current is applied, the plunger shifts to the middle of the cylinder, opening up the passageway for air, liquid, or a mixture of air and liquid, depending on the application.

2. Features

(1) Bag Filter magnetic valves developed by the Company are exclusively designed for use in particle collectors, ensuring that diaphragm valves in collectors are always functioning properly. Their compact size makes them easy to install, and their direct hook-up design enables them to be directly connected to matched voltages.

(2) The magnetic valve is a specialized, economical device which may be installed as a separate unit or as part of a gang box with remote control to activate the membrane valve. The stamped aluminum alloy casing also provides extra protection from electrical explosion.

(3) The magnetic valve features quick-connecting copper leads to save time and cost during installation.
Environmental Pollution Control Instrument and Related Equipment
Fitting And Valve

3. Specification and Functions

<table>
<thead>
<tr>
<th>Pipe Diameter</th>
<th>6A</th>
<th>8A</th>
<th>20A</th>
<th>25A</th>
<th>40A</th>
<th>50A</th>
<th>65A</th>
<th>80A</th>
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</thead>
<tbody>
<tr>
<td>1/8&quot;</td>
<td>3/4&quot;</td>
<td>1&quot;</td>
<td>1 1/2&quot;</td>
<td>2&quot;</td>
<td>2 1/2&quot;</td>
<td>3&quot;</td>
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<tr>
<td>Flow Hole Diameter (mm)</td>
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<td>4</td>
<td>3</td>
<td>4</td>
<td>21</td>
<td>34</td>
<td>42</td>
<td>66</td>
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<tr>
<td>CV Value</td>
<td>0.43</td>
<td>0.43</td>
<td>0.43</td>
<td>0.43</td>
<td>11.2</td>
<td>18.5</td>
<td>43</td>
<td>60</td>
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<tr>
<td>Using Pressure</td>
<td>0-9</td>
<td>0-7</td>
<td>0-9</td>
<td>0-7</td>
<td>0.5-7</td>
<td>0.5-7</td>
<td>0.5-7</td>
<td>0.5-7</td>
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</tbody>
</table>

Universal Voltage
AC 220/110
DC 24

4. Product Photo

[Product Photos]

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力捲企業股份有限公司  BAG FILTER ENTERPRISE CO., LTD.
新北市蘆洲區民族路 227 巷 24 弄 7 号
No.7, Alley 24, Lane 227, Min-Tsu Rd., Luchou District, New Taipei City, Taiwan
TEL: +886-2-2283-5858 FAX: +886-2-2282-8942 E-mail: bag1212@ms46.hinet.net http://www.li-hui.com.tw
DIAPHRAGM VALVE

1. Structure and Principle

   **Principle:**
   This diaphragm-type dust collector features a small opening fitted with a magnetically controlled valve. It is operated by pressure in the tubing. When the magnetic valve is activated, it opens up the guide intake and applies pressure on the membrane through its tip. This results in uneven pressure and causes the main valve to open. When the magnetic switch is off the intake valve closes and pressure from the tube exerts uneven pressure on the diaphragm, which opens up the main valve.

   With a compound diaphragm valve the guide opening magnetic valve and the diaphragm valve are linked by a feeder tube. This design enables the magnetic valve to be set in a fixed position.

   **Structure:**
   (1) Unit: Aluminum alloy.
   (2) Coil grade: F.
   (3) Connection of coil: Plug-in type or out-connection type.
   (4) Electric safety standards: IEC 335.
   (5) Electric power source: DC 24V, AC 110V/220V/50Hz, 60Hz.

2. Features

   (1) The pulse-activated diaphragm valve is designed to maximize collection of dust. It is durable and accommodates high air flows and opens and closes quickly. The design ensures absolute safety and the greatest possible pulse force.

   (2) Aluminum alloy construction in a bundled tube arrangement.

   (3) High quality for optimum performance under long periods of operations. Sealed to prevent contamination from outside.

3. Specification

   (1) Used pressure: 0.5~7 bar.
   (2) Safety pressure: 10 bar.
   (3) Ambient temperature: -20~85 ℃.
   ※ It prevents the solidification damages to the liquid under low temperature.

4. Product photo
SUPER-FINE FIBRE DUST-FREE RAG

1. Structure and Principle
   The wiper is a polyester structure knitted with 100% continuous micro-denier filaments, which features a specialty cross-section. Each filament is twenty-fifth in diameter of human hair. Ultrasonically cut, sealed and laundered with DI water in a class 1 cleanroom environment, it is designed to wipe off micro-contaminants from the surfaces of sophisticated high technology products and cleanroom tools. It exhibits excellent wiping performance, high absorbency and chemical resistance.

2. Purpose
   Ideal for use in high technology industries, including semiconductor, TFT-LCD, optical electronics, biotechnology, cleanroom construction and equipment, for which operations are processed in cleanroom environment.

3. Features
   (1) All edges are ultrasonically cut and sealed to prevent release of fibers and particles.
   (2) All wipers are laundered and packed in class 1 cleanroom with ultra-low levels of particles, ions and residues assured.
   (3) With diameter as twenty-fifth of a human hair, filaments are shaped to a specialty cross-section that features grooves for excellent absorbency and particle trapping.
   (4) Polyester has excellent chemical resistance.

4. Specifications and Functions
   (1) Basis Weight: 142 ± 3 g/m²
   (2) Sorptive Capacity: ≥ 380 ml/m²
   (3) Sorptive rate: ≤ 1 sec
   (4) Particlws (≧0.5 µm) ≤ 50 counts
   (5) Ions
      ● Na⁺: 0.9 ppm.
      ● K⁺: 0.1 ppm.
      ● Cl⁻: 0.2 ppm.
      ● Non-volatile residue in IPA ≤ 0.01 g/m²

5. Product Photo

尚磊科技股份有限公司
SUNRAY SCIENCE & TECHNOLOGY CO., LTD.
台北市内湖區瑞光路258 巷50號2樓 2F, No. 50, Lane 258, juikuang Rd., Neihu, Taipei, Taiwan
TEL: +886-2-8797-1123 FAX: +886-2-8797-1127
E-mail: sunraytw@ms35.hinet.net http://http://www.sun-ray.com.tw
<table>
<thead>
<tr>
<th>Company</th>
<th>Classification</th>
<th>Elaboration</th>
<th>Equipment</th>
<th>Page</th>
</tr>
</thead>
<tbody>
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<td>AIRTREE OZONE TECHNOLOGY CO. (愛樹)</td>
<td>Water/Wastewater Treatment and Recycling Equipment</td>
<td>Related Apparatus</td>
<td>Ozone Generator &amp; High-Performance Mixing Facilities</td>
<td>108</td>
</tr>
<tr>
<td>AMIA., LTD. (毅昕)</td>
<td>Waste Treatment and Recycling Equipment</td>
<td>Recycling Equipment</td>
<td>Titanium Equipment – Titanium Heat Exchangers, Tank, A Variety Of Tower Type, Kettle-Type, Reactor, Mno Anode</td>
<td>332</td>
</tr>
<tr>
<td>ARCADIA FILTER LTD. (購福)</td>
<td>Water/Wastewater Treatment and Recycling Equipment</td>
<td>Water Treatment Equipment</td>
<td>Auto Self-Cleaning Filters</td>
<td>14</td>
</tr>
<tr>
<td>BAG FILTER ENTERPRISE CO., LTD. (力源)</td>
<td>Environmental Pollution Control Instrument and Related Equipment</td>
<td>Fitting and Valve</td>
<td>Magnetic Valve</td>
<td>343</td>
</tr>
<tr>
<td>BAG FILTER ENTERPRISE CO., LTD. (力源)</td>
<td>Environmental Pollution Control Instrument and Related Equipment</td>
<td>Fitting and Valve</td>
<td>Diaphragm Valve</td>
<td>345</td>
</tr>
<tr>
<td>C &amp; K PROTECH CORP (朝陽)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Gaseous pollutants Control Equipment</td>
<td>Wet Scrubber</td>
<td>227</td>
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<tr>
<td>CHEN FULL INTERNATIONAL CO., LTD (千隆)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Accessories for Air Pollution Control Equipment</td>
<td>Ducts And Dampers For Chemicals Exhaust System</td>
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<tr>
<td>CHIAN TZENG CO., LTD (千福)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Particulate Control Equipment</td>
<td>Pulse Spray-Type Fabric Filter</td>
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<tr>
<td>CHIAN TZENG CO., LTD (千福)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Particulate Control Equipment</td>
<td>Static Filter</td>
<td>187</td>
</tr>
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<td>CHIAN TZENG CO., LTD (千福)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Particulate Control Equipment</td>
<td>Non-Pump Wet Exhaust Treatment Equipment</td>
<td>192</td>
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<tr>
<td>CHIAN TZENG CO., LTD (千福)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Gaseous pollutants Control Equipment</td>
<td>Wet Packing Reactor</td>
<td>216</td>
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<tr>
<td>CHIAN TZENG CO., LTD (千福)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Gaseous pollutants Control Equipment</td>
<td>High-Temperature Wet Desulfurisation Exhaust And Dust-Collector System</td>
<td>250</td>
</tr>
<tr>
<td>CHIAN TZENG CO., LTD (千福)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Gaseous pollutants Control Equipment</td>
<td>Waste Incinerator’S Dust-Gathering And Treatment System</td>
<td>252</td>
</tr>
<tr>
<td>CHIAN TZENG CO., LTD (千福)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Hybrid Air Pollution Control System</td>
<td>Wet Desulfurization And Deodourisation System</td>
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<td>CHING SAN ENVIRONMENT TECHNOLOGY CO., LTD (購三)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Particulate Control Equipment</td>
<td>Electrostatic Precipitator</td>
<td>209</td>
</tr>
<tr>
<td>CHUAN FENG MACHINEY CO., LTD (濱風)</td>
<td>Sludge Treatment and Recycling Equipment</td>
<td>Belt Filter De-watering Machine</td>
<td>Filter-Roller Sludge Dehydrator</td>
<td>125</td>
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<td>CHUAN FENG MACHINEY CO., LTD (濱風)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Particulate Control Equipment</td>
<td>Pulse Air Jet Bag Filter</td>
<td>182</td>
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<tr>
<td>CHUAN FENG MACHINEY CO., LTD (濱風)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Particulate Control Equipment</td>
<td>Venturi Scrubber</td>
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<tr>
<td>CHUAN FENG MACHINEY CO., LTD (濱風)</td>
<td>Air Pollution and Noise Control Equipment</td>
<td>Gaseous pollutants Control Equipment</td>
<td>Filler Air-Jet Scrubber</td>
<td>230</td>
</tr>
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<td>GREAT HONOR ENVIRONMENTAL TECH. CO., LTD (大興)</td>
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<td>158 NEW FACE ENVIRONMENTAL DEVELOPMENT CO., LTD. (新環境)</td>
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<td>AIRTREE OZONE TECHNOLOGY CO.</td>
<td>5F., No.1, Alley 2, Lane 342, Fu-Te 1Rd., Sijhih District, New Taipei City, Taiwan</td>
<td>TEL: +886-2-2693-2663, FAX: +886-2-8693-1695</td>
<td><a href="http://www.airtreetech.com">http://www.airtreetech.com</a>, E-mail: <a href="mailto:market@airteetech.com">market@airteetech.com</a></td>
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<td>AMIA CO., LTD</td>
<td>No.19, Lane 195, Yongfong Rd., Tucheng District, New Taipei City, Taiwan</td>
<td>TEL: +886-3-354-1009, FAX: +886-3-354-1003</td>
<td><a href="http://www.persee.com.tw">http://www.persee.com.tw</a>, E-mail: <a href="mailto:persee@persee.com.tw">persee@persee.com.tw</a></td>
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<td>ARCADIA FILTER LTD.</td>
<td>9F., No.47-1, Jinfeng 5th St., Zhongli Dist., Taoyuan City, Taiwan</td>
<td>TEL: +886-3-436-0056, FAX: +886-3-456-9212</td>
<td><a href="http://arcadia-filter.com">http://arcadia-filter.com</a>, E-mail: <a href="mailto:p_j@seed.net.tw">p_j@seed.net.tw</a></td>
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<td>BAG FILTER ENTERPRISE CO., LTD.</td>
<td>No.174, Lane 128, Sanmin Rd., Luchou District, New Taipei City, Taiwan</td>
<td>TEL: +886-2-2283-5588, FAX: +886-2-2282-8942</td>
<td><a href="http://www.li-hui.com.tw">http://www.li-hui.com.tw</a>, E-mail: <a href="mailto:bag1212@ms46.hinet.net">bag1212@ms46.hinet.net</a></td>
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<td>C &amp; K PROTECH CORP</td>
<td>No.201, Shuren Rd., Guishan Dist., Taoyuan City, Taiwan</td>
<td>+886-3-359-0181</td>
<td>+886-3-329-9002</td>
<td><a href="mailto:ck432277@ms76.hinet.net">ck432277@ms76.hinet.net</a></td>
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<tr>
<td>CHEN FULL INTERNATIONAL CO., LTD</td>
<td>9F, No. 99, Sec. 1, Nan-Kan Rd, Lu-Chu Hsiang, Taoyuan, Taiwan</td>
<td>+886-3-322-0022</td>
<td>+886-3-322-0055</td>
<td><a href="mailto:gmr@chenfull.com.tw">gmr@chenfull.com.tw</a></td>
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<tr>
<td>CHIAN TZENG CO., LTD.</td>
<td>No.78, Chazhuan 1st St., Guishan Dist., Taoyuan City, Taiwan</td>
<td>+886-3-359-4725</td>
<td>+886-3-359-4727</td>
<td><a href="mailto:Jeen.fong@msa.hinet.net">Jeen.fong@msa.hinet.net</a></td>
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<tr>
<td>CHING SAN ENVIRONMENT TECHNOLOGY LTD. CO.</td>
<td>No. 2, Lane 91, Sec. 3, Zhong Shan Rd., Taishan Shang District, New Taipei City, Taiwan</td>
<td>+886-2-2906-3338</td>
<td>+886-2-2901-5338</td>
<td><a href="mailto:tiger.go@msa.hinet.net">tiger.go@msa.hinet.net</a></td>
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<td>CHUAN FENG MACHINEY CO., LTD</td>
<td>No.11, Lane 1266, Sec. 2, Wucyuan W. Rd., Nantun District, Taichung City, Taiwan</td>
<td>+886-4-2389-2832</td>
<td>+886-4-2389-0168</td>
<td><a href="http://www.chuanfeng.com.tw">http://www.chuanfeng.com.tw</a></td>
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| But The Agglutinate Pharmaceutical Of High Polymer Of Mode Steeps The Making Device P38 |                                                                          |         |         |                                           |                              |
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<tr>
<td>DESICCANT TECHNOLOGY</td>
<td>17F., No.88, Zhongrenxincun, Zhongli Dist., Taoyuan City, Taiwan</td>
<td>+886-3-407-1689</td>
<td>+886-3-411-6706</td>
<td><a href="http://www.dtech.com.tw">http://www.dtech.com.tw</a></td>
<td><a href="mailto:dtech@dtech.com">dtech@dtech.com</a></td>
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<tr>
<td>CORPORATION</td>
<td>桃園市中壢區中山路88號17樓</td>
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<td>新北市新莊區五權一路1號8樓之5(五股工業區)</td>
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<td>EF-MATERIALS INDUSTRIES INC.</td>
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<td>TEL: +886-3-451-3736, FAX: +886-3-451-3353, <a href="http://www.efmi.com.tw">http://www.efmi.com.tw</a>, E-mail: <a href="mailto:sharon@efmi.com.tw">sharon@efmi.com.tw</a></td>
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<td>EVERGLORY WATER TECH. INC.</td>
<td>9F, No.567, Xuecheng Rd., Shulin District, New Taipei City, Taiwan</td>
<td>TEL: +886-2-8970-6036, FAX: +886-2-8970-6026, <a href="http://www.everglory-water.com">http://www.everglory-water.com</a>, E-mail: <a href="mailto:randychen@everglory-water.com">randychen@everglory-water.com</a></td>
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<td>FAIR TECHNICAL ENGINEERING CO., LTD</td>
<td>11-5F, No. 80, Sec. 1, Ho Ping W. Rd. Taipei, Taiwan</td>
<td>TEL: +886-2-2367-7070, FAX: +886-2-2365-9024, <a href="http://www.fairtech.url.tw">http://www.fairtech.url.tw</a>, E-mail: <a href="mailto:fair.tech@msa.hinet.net">fair.tech@msa.hinet.net</a></td>
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<td>FANSYS CO., LTD.</td>
<td>No.1-1, Ln. 90, Sec. 1, Nanshan Rd., Luzhu Dist., Taoyuan City, Taiwan</td>
<td>TEL: +886-3-322-7966, FAX: +886-3-322-8624, <a href="http://www.fansys.com.tw/">http://www.fansys.com.tw/</a>, E-mail: <a href="mailto:fansys@seed.net.tw">fansys@seed.net.tw</a></td>
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PTFE Membrane Bioreactor P68

Porous Ceramics Bio-Reactor (PCBR) P70

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Acid/Alkali Resistant Fan P288
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<td>18F, No. 96, Sgub-Tai-Wu Rd., Sec. 1, His-chih District, New Taipei City, Taiwan</td>
<td>+886-2-2696-9123</td>
<td>+886-2-2696-3866</td>
<td><a href="http://www.biorich.com.tw">http://www.biorich.com.tw</a></td>
<td><a href="mailto:biorich@seed.net.tw">biorich@seed.net.tw</a></td>
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<td>FENG CHIA ENGINEERING CO.</td>
<td>No.50, Dajheng St., Nantun District, Taichung City, Taiwan</td>
<td>+886-4-2462-1215</td>
<td>+886-4-2463-3312</td>
<td><a href="http://www.fgfg.com.tw">http://www.fgfg.com.tw</a></td>
<td><a href="mailto:f4621215@ms36.hinet.net">f4621215@ms36.hinet.net</a></td>
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<td>逢甲實業有限公司</td>
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<td>FENG GUH ENTERPRISE CO., LTD</td>
<td>4F-1,No.286-9, Hsin-Ya Rd., Kaohsiung, Taiwan</td>
<td>+886-7-822-2918</td>
<td>+886-7-812-3938</td>
<td><a href="http://www.feng-guh.com.tw">http://www.feng-guh.com.tw</a></td>
<td><a href="mailto:fengguh@ms8.hinet.net">fengguh@ms8.hinet.net</a></td>
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<td>FILAD FILTRATION INDUSTRY CO., LTD</td>
<td>21F-2, No.787, Jhongming S. Rd, Taichung City, Taiwan</td>
<td>+886-4-2262-2902</td>
<td>+886-4-2262-5922</td>
<td><a href="http://www.filad-filter.com/">http://www.filad-filter.com/</a></td>
<td><a href="mailto:service@filad-filter.com">service@filad-filter.com</a></td>
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<td>國際過濾工業有限公司</td>
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### FU SUNG ENTERPRISE CO., LTD

5F.-1, No.111-66, Sec. 2, Wunsin Rd., Situn District, Taichung City, Taiwan

Tai中市西屯區文心路二段 111 之 66 號 5 樓之 1

TEL: +886-4-2251-2222  FAX: +886-4-2251-3000

E-mail: service@f-s.com.tw

http://www.f-s.com.tw

Pre-Fabricated FRP Sewage Treatment Plant P113

### GASTECH CO., LTD.

9F, No. 7, Lane 155, Sec. 3, Peishen Rd., Shenkeng Shiang, Taipei, Taiwan

新北市深坑區北深路三段 155 巷 7 號 9 樓

TEL: +886-2-2664-9697  FAX: +886-2-2664-9695

E-mail: sales@gastech.com.tw

http://www.gastech.com.tw

Wall-Mount Type Gas Detector P337
Portable Gas Detector P338
Gas Analyzer P340

### GOLDEN FLAG VENTILATION IND CO., LTD

No.37, Lane 860, Nantun Rd., Sec.2, Tachang City

台中市南屯路二段 860 巷 37 號

TEL: +886-4-2389-8928  FAX: +886-4-2389-9053

E-mail: wisdomsales@goldengroups.com

http://www.goldengroups.com

Pulse Jet Filter P172、Wet Scrubber P198
Activity Carbon Deodorizer P237
Turbo Fan P273

### GREAT HONOR ENVIRONMENTAL TECH. CO., LTD

2F, No.635, Jhongjheng Rd., Jhonghe District, New Taipei City, Taiwan

新北市中和區中正路 635 號 2 樓

TEL: +886-2-2228-8196  FAX: +886-2-2228-8190

E-mail: gh7741@ms8.hinet.net

http://www.greathonor.net

Bag filter-Pulse Type P159、Air Pollution Control System P255
Municipal/County Incinerator P308、Sludge Dryer/Incinerator P309
Industrial Incinerator P310、Special Incinerator /Animal Incinerator P311
Waste Liquid Incinerator P312、Contaminated/Hospital Incinerator P313
Flue Gas Desulfurization (FGD) P314
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<td>No. 206, Huanhe St., Sijhih District, New Taipei City, Taiwan</td>
<td>Non-Clog Sewage (Sludge) Pump P84, Horizontal Single Stage Scroll Pump P86, AR Submersible Aerator P96, Jet Aerator (JAX) P97, Surface Aerator P98</td>
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<td><strong>GUAN CHENG Enviro Tech Protection Co., Ltd.</strong></td>
<td>No. 567, Zhongzheng 2nd St., Yung-Kang District, Tainan City, Taiwan</td>
<td>Photocatalyst P269</td>
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<td><strong>GUEN YOUNG ENTERPRISE CO., LTD.</strong></td>
<td>No. 31, 37th Rd, Taichung Industrial Park, Taichung, Taiwan</td>
<td>Copper, Silver Ion Bacteria Elimination System P342</td>
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<td>HAN HWAN POLLUTION CONTROL MACHENICS CO., LTD.</td>
<td>No.45, Lane 360, Chung Shan Rd., Shengang District, Taichung City, Taiwan</td>
<td>+886-4-2561-3885</td>
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<td>HCP PUMP MANUFACTURER CO., LTD</td>
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<td>+886-8-756-2345</td>
</tr>
<tr>
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<td>屏東市屏東加工出口區經建路 33 號</td>
<td><a href="http://www.hcppump.com.tw">http://www.hcppump.com.tw</a></td>
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<td>+886-7-699-6382</td>
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<td>高雄市湖內區太爺村中山路二段 2 巷 17 弄 14 之 2 號</td>
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<tr>
<td>HIGH VIEW INNOVATION CO., LTD.</td>
<td>No.251, Niupu Road, Hsinchu City, Taiwan</td>
<td>+886-3-538-4063</td>
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<td>新竹市牛埔路 251 號</td>
<td><a href="http://www.global.com">http://www.global.com</a></td>
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<td>E-mail: <a href="mailto:wisdom@hviglobal.com">wisdom@hviglobal.com</a></td>
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<td>Inno-Ultra High Efficiency Green Energy Hydrolysis Systems P58</td>
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<th>Company Name</th>
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<td>HORUNG HWA DEVELOPMENT CO., LTD.</td>
<td>No.253, Zhongzheng Rd., Longtan Dist., Taoyuan City, Taiwan</td>
<td>Sludge Dewatering Machine P124</td>
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<tr>
<td></td>
<td>TEL: +886-3-489-8689 FAX: +886-3-470-9838</td>
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<td><a href="http://www.aiwadancer.com/environment/factory.htm">http://www.aiwadancer.com/environment/factory.htm</a> E-mail: <a href="mailto:borhwa@ms5.hinet.net">borhwa@ms5.hinet.net</a></td>
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<td>JEEN FONG CO., LTD.</td>
<td>1F, No.78, Chazhuan 1st St., Guishan Dist., Taoyuan City, Taiwan</td>
<td>High-Performance Static Grease Smoke Processor P212</td>
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<tr>
<td></td>
<td>TEL: +886-3-350-0183 FAX: +886-3-359-4727</td>
<td>Multi-Blade Centrifugal Fan &amp; Box Fan P276</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.jeenfong.com.tw">http://www.jeenfong.com.tw</a> E-mail: <a href="mailto:Jeen.fong@msa.hinet.net">Jeen.fong@msa.hinet.net</a></td>
<td>Rooftop Axial Ventilator, Centrifugal Ventilator &amp; Non-Power Ventilator P278</td>
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<td>Radial Centrifugal Fan P280, Axial Air-Supply Fan P282</td>
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<td>Turbo Centrifugal Fan P284, Multi-Blade Centrifugal Fan P286</td>
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<tr>
<td>KING FOON MACHINERY CO., LTD.</td>
<td>No. 57, Lane 197, Sec. 1, His Nan Rd. Wurih District, Taichung City, Taiwan</td>
<td>Bag Type Dust Collector P168</td>
</tr>
<tr>
<td></td>
<td>TEL: +886-4-2335-2999 FAX: +886-4-2335-3298</td>
<td>Steelworks Arc Furnace Dust-Collecting Equipment P169</td>
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<tr>
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<td><a href="http://www.king-foon.com.tw">http://www.king-foon.com.tw</a> E-mail: <a href="mailto:kingfoon@ms37.hinet.net">kingfoon@ms37.hinet.net</a></td>
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<tr>
<td>L &amp; F INTERNTATIONAL CO., LTD.</td>
<td>No.43-5, Nine-Prdestal-Laos, 23 Lin Kow-Loon Borg Lungan Shiang, Taoyuan, Taiwan</td>
<td>Air Pollution Control P226</td>
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<tr>
<td></td>
<td>TEL: +886-3-499-0369 FAX: +886-3-499-0010</td>
<td></td>
</tr>
<tr>
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<td>E-mail: <a href="mailto:linda224@ms52.hinet.net">linda224@ms52.hinet.net</a></td>
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<td>Company Name</td>
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<tr>
<td>LIANG CHANG CO., LTD.</td>
<td>No.8-6, Lane 1776, Chung Cheng Rd., Tsao-tun Town, Nahtou Hsien, Taiwan</td>
<td>TEL: +886-49-256-6935 FAX: +886-49-256-3653</td>
</tr>
<tr>
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<tr>
<td>LIANG CHI INDUSTRY CO., LTD.</td>
<td>12F, No.1, Sec. 3, Nanjing E. Rd., Jhongshan District, Taipei City, Taiwan</td>
<td>TEL: +886-2-2506-3588 FAX: +886-2-2502-1872</td>
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<tr>
<td>NEW CENTURY MEMBRANE CO., LTD.</td>
<td>No.110, Sec.2, Gansu Rd., Situn District, Taichung, Taiwan</td>
<td>TEL: +886-4-2315-5828 FAX: +886-4-2315-5228</td>
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<tr>
<td>NEW FACE ENVIRONMENTAL DEVELOPMENT CO., LTD.</td>
<td>No.901, Guangfu Rd., Bade Dist., Taoyuan City, Taiwan</td>
<td>TEL: +886-3-363-3135 FAX: +886-3-363-3215</td>
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- Spray-Paint Treatment Facility P197
- Fans P271
- Turbine Fan P272
- LFC Fan-Free Cooling System P5
- FRP Scrubber P104
- Positive Pressure Air P12
- Negative Pressure Air P13
- Round Disk-Plate UF-MBR Module P65
- Water-Cooling Smoke-Free Incinerator P323
- Rotary Incinerator P324
<table>
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<tr>
<th>Company Name</th>
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<tr>
<td>NEW WATER ENVIRONMENTAL ENGINEERING LIMITED</td>
<td>14F-3, NO.100, XingPU 6 Street, Taoyuan City, Taiwan</td>
<td>+886-3-346-2089</td>
<td>+886-3-346-2087</td>
<td><a href="http://www.smembrane.com">http://www.smembrane.com</a></td>
<td><a href="mailto:se.sing@msa.hinet.net">se.sing@msa.hinet.net</a></td>
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**Introduction Of Flat Plate Membrane Bio-Reactor (MBR) Modulus P67**
Spiral Type UF Membrane For Ed Paint P110

**Membrane Bioreactor P51**

**Services**
- Continuous Sand Filtering Equipment P6, MBR P63
- High Efficiency Air Floating Equipment P82
- Sediment Pool, Round Sludge Scraper P83, Sludge Dehydrating Machine P123
- Bag-Filter Dust Collector P177
- Semi-Dry Type Flue Gas Dust Collection, Acid-Removing And Desulfuration Equipment P258
- Portable Industrial Vacuum Cleaner P265, Blower P289
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- Heat-Recycle Boiler & Incinerator - SH-C Type P321
<table>
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<th>TEL</th>
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<tr>
<td><strong>SAN PERNG ENTERPRISE CO., LTD.</strong></td>
<td>No.50-2, Lin 4, Sinfu Village, Yuanli Township, Miaoli County, Taiwan</td>
<td>+886-4-2681-1321-2</td>
<td>+886-4-2681-1320</td>
<td><a href="mailto:sanperng@ms47.hinet.net">sanperng@ms47.hinet.net</a></td>
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<td>Pulse Jet Bag Filter P155, Conduction wet Scrubber P191</td>
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<td>Wet Scrubber P215, Activated Carbon Absorption Device P234</td>
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<td>Flue Gas Desulfurization System P249, Small Scale Waste Incinerator P315</td>
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<tr>
<td><strong>SEPARATION PROCESS TECHNOLOGY INC</strong></td>
<td>No.15-2, Shuyi 6th Lane, South Chiu, Taichung City, Taiwan</td>
<td>+886-4-2260-5522</td>
<td>+886-4-2260-1012</td>
<td><a href="mailto:cosbond@ms4.hinet.net">cosbond@ms4.hinet.net</a></td>
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<td>Pro Purification Systems P15, Puff Ultra Filtration Unit P16</td>
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<td>Edi Ultra Pure Water System P17</td>
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<td><strong>SHAN YA ENVIRONMENTAL TECHNOLOGY CO., LTD.</strong></td>
<td>No.154, Dayou St., Xitun Dist., Taichung City, Taiwan</td>
<td>+886-4-2203-5967</td>
<td>+886-4-2205-4588</td>
<td><a href="mailto:shanya.eco@msa.hinet.net">shanya.eco@msa.hinet.net</a></td>
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<td>Automatic Bar Screen P21, Aerated Grit and Grease Removal Machine P22</td>
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<td>Automatic Skimmer P73, Sludge Collector of Rectangular Sediment Basin P74</td>
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<td>Sludge Plastic Drying Bed P137</td>
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<td><strong>SIMILAR ENTERPRISE CO., LTD</strong></td>
<td>No.485, Lane. 506, Sec1 His Nan Rd., Tong Yang Village, Wu Jih District, Taichung City, Taiwan</td>
<td>+886-4-2335-2827</td>
<td>+886-4-2335-2659</td>
<td><a href="mailto:same66@ms16.hinet.net">same66@ms16.hinet.net</a></td>
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<td>Vertical Cellular-Type Bio-Filter P53, Rotating Biological Contactor P54</td>
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<td>Wavy Gradient Bio-Filter P56, Mesh Bio-Filters P57, Inclined Tube Settler P77</td>
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<td>Highly Effective Fine Bubble Diffuser P101, Octagonal Plastic Sewage Well P106</td>
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<td></td>
<td>Kitchen Sewage Piping Box P107</td>
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<tr>
<td>SUN HOME INTERNATIONAL DEVELOPMENT CO., LTD</td>
<td>No.29, Lane 535, Sec. 4, Yuanlu Rd., Shihu Jen, Changhu, Taiwan 彰化縣溪湖鎮員鹿路四段535巷29號</td>
<td>+886-4-882-9186</td>
<td>+886-4-882-5809</td>
<td><a href="http://www.fargreen.com.tw">http://www.fargreen.com.tw</a></td>
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<tr>
<td>SUN RISE TOP INDUSTRIAL CORP.</td>
<td>4F, 205, Her-Pyng 2nd Rd, Kaohsiung, Taiwan 高雄市前鎮區和平二路205號4F</td>
<td>+886-7-722-3992</td>
<td>+886-7-722-4038</td>
<td><a href="http://www.srtic.com">http://www.srtic.com</a></td>
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<tr>
<td>TAI HO ENVIRONMENTAL ENTERPRISES CO., LTD.</td>
<td>7F, No.58, Kienkwo N. Rd., Sec.1, Taipei, Taiwan 台北市建國北路一段58號7樓</td>
<td>+886-2-2518-3499</td>
<td>+886-2-2518-4336</td>
<td><a href="http://www.dewater.com.tw">http://www.dewater.com.tw</a></td>
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- Intercepting Sink P29
- Chemical Tank P105
- FRP Prefabricated Waste-water Treatment Facility P111
- ASP Wastewater Treatment System P46
- Regeneration-Free Pure-Water Equipment P19
- Fixed-Bed Ultra Pure Water Purification Facility P20
- U.A.S.B. (Up Flow Anaerobic Sludge Blanket) P52
- Super-Fine Fiber Dust-Free Wiper P346
- Auto-Cleaning Membrane Filter Press P128, Membrane Filter Press P130
- Plate Type Continuous Dryer P141, Vacuum Drying Filter Press P143
- Sludge Advanced conditioning and High Pressure Dewatering System P146
<table>
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<tr>
<th>Company</th>
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<tr>
<td>TAIWAN CEMENT ENGINEERING CORP.</td>
<td>6F, No.113, Sec. 2, Jhongshan N. Rd., Jhongshan District, Taipei City, Taiwan</td>
<td>TEL: +886-2-2522-2698, FAX: +886-2-2522-2882, <a href="http://www.tcc.com.tw/tcec">http://www.tcc.com.tw/tcec</a>, E-mail: <a href="mailto:ok5669@ms24.hinet.net">ok5669@ms24.hinet.net</a></td>
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- Ash Collection System P160
- Electrostatic Precipitator P206
- Cartridge Dust Collector, Bag House P183, Cyclone Scrubber P195
- Kitchen Oil Mist Collector P205, Vacuum Dust Collector System P214
- Ventilation & Wet Scrubbers System For Electronics Manufacturing Process P222
- Waste VOCs Oxidation RTO & Heat Recovery System P232
- Flue Gas Dry Fad System P256, Semi-Dry & Wet Fgd System P257
- High Concentration VOCs Treatment and Heat Recovery System P260
- Central Vacuum Cleaner System P264
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<td>TAIWAN PASSAL CO., LTD</td>
<td>No.533-3, Fu Kuo Rd., Sec2, Lu Chu Hsing Taoyuan, Taiwan</td>
<td>TEL: +886-3-313-2846, FAX: +886-3-313-2840, E-mail: <a href="mailto:laidaqqq@ms17.hinet.net">laidaqqq@ms17.hinet.net</a></td>
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<tr>
<td>TAIWAN SINTONG MACHINERY CO., LTD</td>
<td>No. 415, Hwa Cheng Rd., Hsin Chuang District, New Taipei City, Taiwan</td>
<td>TEL: +886-2-8521-5837, FAX: +886-2-8522-1774, E-mail: <a href="mailto:sinto@ms26.hinet.net">sinto@ms26.hinet.net</a></td>
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<tr>
<td>TRUE TEN INDUSTRIAL CO., LTD</td>
<td>No.147-5, lane Nan-Cian, Ding-Tai Village, Wu-Fong District, Taichung City, Taiwan</td>
<td>TEL: +886-4-2331-1999, FAX: +886-4-2332-9709, E-mail: <a href="mailto:tureten-bioearn@umail.hinet.net">tureten-bioearn@umail.hinet.net</a></td>
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<tr>
<td>WATER POWER TECHNOLOGY CO., LTD.</td>
<td>No.262-10, Sec. 1, Ganyuan St., Shulin Dist., New Taipei City, Taiwan</td>
<td>TEL: +886-2-2668-6598, FAX: +886-2-2680-7935, E-mail: <a href="mailto:water.power66@msa.hinet.net">water.power66@msa.hinet.net</a></td>
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Filter Press P133
Vacuum Dryer Filter Press P145
Small Pulse-Spray Fabric Filter P161
Small Oscillating Fabric Filter P162
Pipe Filter System P163
Air-Spray Fabric Filter P165
Anti-Explosion Bubble Filter P196
YK-100 Low Temperature Spray Solid Liquid Separated Machine P304
YK-111 Large Space Low Temperature Cool Wind Solid-Liquid-Separating Machine P305
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<tr>
<th>Company</th>
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<tr>
<td>YAO CHUAN ENTERPRISE CO., LTD.</td>
<td>No.99, Chengren W. St., Renwu Dist., Kaohsiung City, Taiwan  高雄市仁武區澄仁西街 99 號</td>
<td>+886-7-373-0278</td>
<td>+886-7-375-8109</td>
<td><a href="mailto:cyao@yao-chuan.com.tw">cyao@yao-chuan.com.tw</a></td>
<td><a href="http://www.yao-chuan.com.tw">http://www.yao-chuan.com.tw</a></td>
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<tr>
<td>YEAMEEI ADVANCED TECHNOLOGY CO., LTD.</td>
<td>No.63, 32th Rd., Taichung Ind. Park Taichung, Taiwan  台中市工業區三十二路 63 號</td>
<td>+886-4-2358-0925</td>
<td>+886-4-2358-0926</td>
<td><a href="mailto:yeam@ms12.hinet.net">yeam@ms12.hinet.net</a></td>
<td><a href="http://www.yeameei.com.tw">http://www.yeameei.com.tw</a></td>
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<tr>
<td>YEOU HSIN ENGINEERING CO., LTD.</td>
<td>No. 26, Lane 37, Chung Yang Rd., Sec. 4, Tu Cheng District, New Taipei City, Taiwan  新北市土城區中央路四段 37 巷 26 號</td>
<td>+886-2-2268-1288</td>
<td>+886-2-2268-1287</td>
<td><a href="mailto:yeou1033@ms32.hinet.net">yeou1033@ms32.hinet.net</a></td>
<td><a href="http://www.yeouep.com.tw">http://www.yeouep.com.tw</a></td>
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<tr>
<td>YES-SUN ENVIRONMENTAL BIOTECH CO., LTD</td>
<td>6F-3 No.236 Sec.2 Fu-Hsing S.Rd. Taipei, Taiwan  台北市復興南路 2 段 236 號 6 樓之 3</td>
<td>+886-2-2325-8689</td>
<td>+886-2-2325-6606</td>
<td><a href="mailto:yessun@ms51.hinet.net">yessun@ms51.hinet.net</a></td>
<td><a href="http://www.yessun.com">http://www.yessun.com</a></td>
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Refrigerant Recycling And Liquefaction Equipment P330
Refrigerant Recycling Equipment FR-999 P331

Pure And Ultrapure Water Purification Facility For The General And Electronics Industry P18

Commercial-Grade Tubular Static Ventilator P210
Pipe Type Electro-Static Precipitator P211

The Automatic Technology Of Treating Organic Waste P329
<table>
<thead>
<tr>
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<tr>
<td><strong>YUAN CHANG Tsay Industry Co., Ltd</strong></td>
<td>No. 106, Lane 382, Sec. 9, Xiangshang Rd., Wu-Chi District, Taichung City, TAIWAN</td>
<td>TEL: +886-4-2630-5899</td>
<td><a href="http://www.ycil.com">http://www.ycil.com</a></td>
<td>E-mail: <a href="mailto:ycil@ycicl.com">ycil@ycicl.com</a></td>
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<tr>
<td><strong>YUHO Refractories Co., Ltd</strong></td>
<td>No.336, Jen Ai Rd, Taliao Hsiang Destruct, Kaohsiung City, Taiwan</td>
<td>TEL: +886-7-701-3591</td>
<td>E-mail: <a href="mailto:yhkpi@ms25.hinet.net">yhkpi@ms25.hinet.net</a></td>
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Auto Bar Screen P23, Solid-Liquid Separating Machine P24, Drum Filters P25
The Oil-Water Separating Machine For Oil Floating Waste Water P26
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Powder Automatic Dispensing Dissolvers P43
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