



# 環境工程曝氣設備

## Environmental Engineering Aerator



**KAI SHING INCORPORATION**



# 曝氣盤系列產品

## Envi-Bubble Disc Diffuser

The membrane fine bubble disc diffusers satisfy all your need of aeration.

### ***Membrane Disc Diffuser***

self cleaning & back flow prevention;  
water stirring & corrosion resistance;  
flexibility & durability.

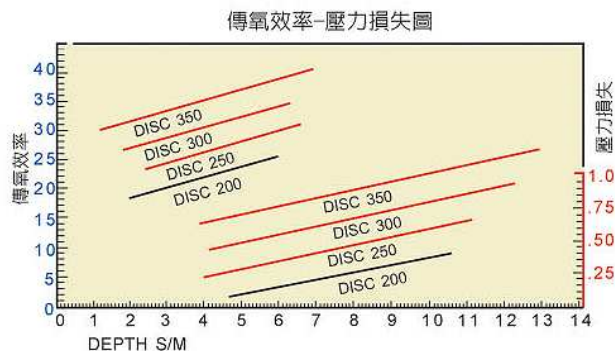
# DISC-200, 250, 300, 350

## 結構 Structure

- 瓣部：採高級人造複合生化工程橡膠(EPDM-NEWPLAN)精練而成，可有效抑制曝氣膜的老化，延長使用壽命。  
Membrane: Adopted the EPDM-NEWPLAN to melt. It can restrain the ageing effectively of the membrane, and protract the using life.
- 曝氣孔：採^型穿孔施作能有效防止污水逆流及曝氣時氣泡均小於0.3mm以下。  
Spreading hole: Adopted the ^ shaped for perforating to prevent adverse of waste water effectively and the bubble would be less than 0.3mm during aeration.
- 本體部：採用NYLON+A.B.S. 強化塑鋼成形，可有效防止變形。  
Base: Adopted the NYLON+A.B.S. Produced by hard plastics. It could prevent it out of shape.

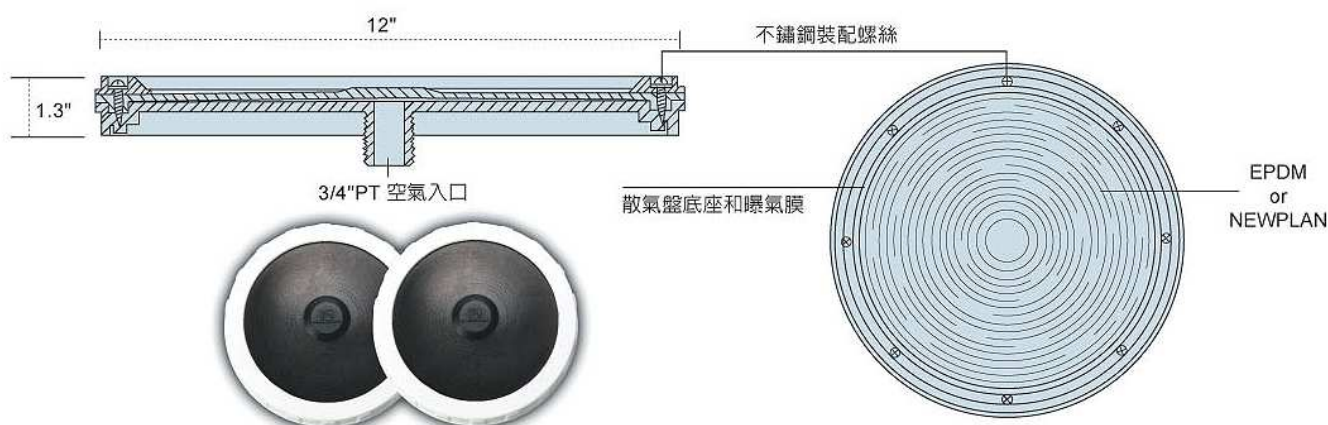
## 優點 Advantage

- 超凡的傳氧效果  
High oxygen transfer efficiency
- 壓力損失小  
Low pressure loss
- 耐酸鹼  
High resistance to corrosion
- 具自動清洗功能  
Self cleaning operation
- 採雙膜片設計防止污水逆流  
Back flow prevention
- 安裝容易  
Easy installation
- 間歇操作性能強  
Intermittent operation capability
- 曝氣均勻  
Water-stirring effect
- 操作風量小  
Low flow to operation



## 適用範圍 Suitable range

- 污水處理氧化接觸池  
Place of dealing with waste water
- 淨水活化  
Active the clean water
- 湖泊、河川、提高溶氧  
Promote the oxygen in lake and river
- 養殖池提高溶氧量  
Promote the oxygen in lake and river
- 穩定MLSS  
Stable the MLSS



## 規格表 Specifications

型號 Model Number	規格 Dimension	操作範圍 (L/min) Flow Range (LPM)	瓣部材質 Membrane	本體部材 Base	固定部件 Hardware
Disc-200	8"x2.3"	20~100	EPDM-NEWPLAN	FIBER+A.B.S.	BOLTFIJED
Disc-250	10"x2.3"	20~150	EPDM-NEWPLAN	FIBER+A.B.S.	BOLTFIJED
Disc-300	12"x2.3"	20~280	EPDM-NEWPLAN	FIBER+A.B.S.	BOLTFIJED
Disc-350	13.5"x2.3"	20~310	EPDM-NEWPLAN	FIBER+A.B.S.	BOLTFIJED



# 曝氣管系列產品

## Aeration Tube Series Product

細微氣泡超凡的傳氧效果滿足所有的需求

自清效果 · 防止逆流 · 無浮力 · 抗氧化

**The fine bubbles' extraordinary oxygen transfer effect can satisfy all demands.**

Self-cleaning effect; backflow preventing; without buoyancy; anti-oxidation.



型號 Model	尺寸 Size	曝氣膜 Aeration membrane	本體結構 Structure	風量(l/min) Amount of wind
TUBE-65-300	12"x2.5"x3/4"NPT	EPDM或VITON	PVC或ABS	10~80
TUBE-65-600	24"x2.5"x3/4"NPT			30~250
TUBE-65-1000	39"x2.5"x3/4"NPT			50~320
TUBE-95-600	24"x 3" x3/4"NPT			50~250
TUBE-95-1000	39"x 3" x3/4"NPT			50~320

## 結構

1. 使用EPDM或VITON橡膠合成膜
2. 利用中空設計消除浮力
3. PVC或ABS成型的空氣入口
4. PVC或ABS管的支撐結構
5. 本體與曝氣膜採不鏽鋼夾具#304固定
6. 曝氣膜氣孔彩倒V或I字型開縫

## 應用範圍

1. 都市廢水處理
2. 工業廢水處理
3. 清淨水處理
4. 穩定淤渣
5. 廢水臭氣擴散
6. 魚池曝氣
7. 河川和湖泊曝氣

## 優點

1. 高效率傳遞氧氣
2. 有效防止阻塞，具自動清除功能
3. 有效防止腐蝕
4. 廣大的空氣流量範圍
5. 壓力損失低
6. 低能量成本
7. 容易安裝
8. 防止逆流
9. 間歇操作能力強
10. 消除浮力
11. EPDM曝氣膜韌性強

## Structure

1. EPDM or VITON rubber synthetic film is used.
2. The hollow design is utilized to eliminate the buoyancy.
3. Air intake of PVC or ABS forming.
4. Support structure of PVC or ABS tube.
5. The stainless steel clamping apparatus #304 is adopted to fix the main body and the aeration membrane.
6. The aeration membrane pores adopt reverse V or I shape slitting.

## Scope of Application

1. Urban wastewater treatment.
2. Industrial wastewater treatment.
3. Clean water treatment.
4. To stabilize the sludge.
5. Ozone diffusion in the wastewater.
6. Fishpond aeration.
7. River and lake aeration.

## Advantages

1. High efficient oxygen transfer.
2. Effectively preventing blocking; with automatic cleaning function.
3. Effectively preventing corrosion.
4. Extensive airflow scope.
5. Low loss of pressure.
6. Low energy cost.
7. Easy to install.
8. Preventing backflow.
9. Strong intermittent operation capability.
10. Eliminating the buoyancy.
11. Strong tenacity of EPDM aeration membrane.



# 高效率雙向曝氣盤 High-Efficiency Double-way Aeration Disc

高耐蝕性，壓力損失少，逆流時可完全關閉  
High corrosion resistance, low pressure loss, and completely shut when backflow occurs.

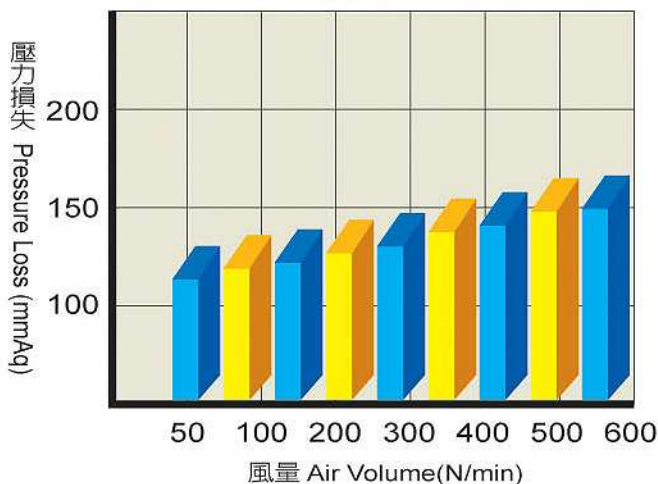




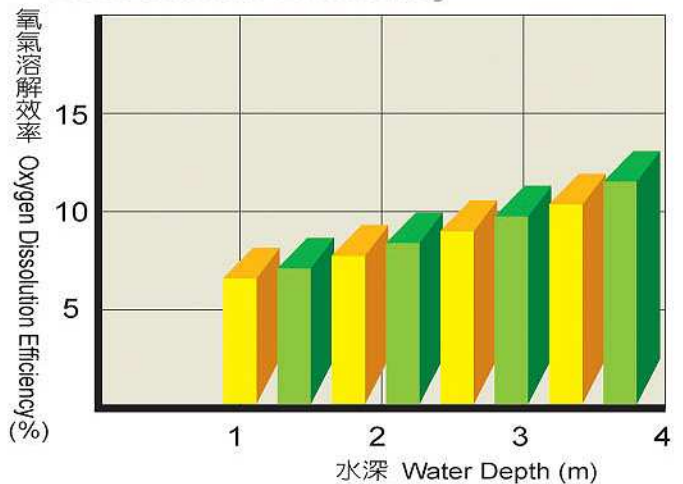
## ● 產品規格 Specifications

尺寸 Size	直徑 150m/m x H90m/m Diameter 150m/m x H90m/m	
標準通風量 Standard Air Volume	50L/min~600L/min	
安裝方式 Installation	向下或向上皆可 Downwards or Upwards	
安裝接合法 Installation Method	PT 1B	
	PT 1/4	
材質 Material	本體部 Body	ABS
	逆止球閥 Check-ball Valve	NBR

## ● 風量與壓力損失的關係 Relation Between Pressure Loss & Air Volume



## ● 水深與氧氣溶解效率 Water Depth & Oxygen Dissolution Efficiency



## 高耐蝕性，壓力損失少，逆流時可完全關閉

High corrosion resistance, low pressure loss, and completely shut when backflow occurs.

- 利用球型逆止裝置設於出風口上，當鼓風機出風壓力低於100mmAq時，球型逆止則自動閉合，防止污水逆流。
- 特優良的耐蝕性，採用高品質ABS複合材質，其耐溫性、軟化溫度點，非一般泛用之ABS塑材可比較。
- 閥門體採用高級合成樹脂、耐候性、耐蝕性、包括老化、低變形性之特點，其使用期效約3倍於一般橡膠類或PVC類之產品。
- 閥本體因具有伸縮性，應通風量之增減，使噴氣口順應調整，故壓力損失少，其變化異常亦少。

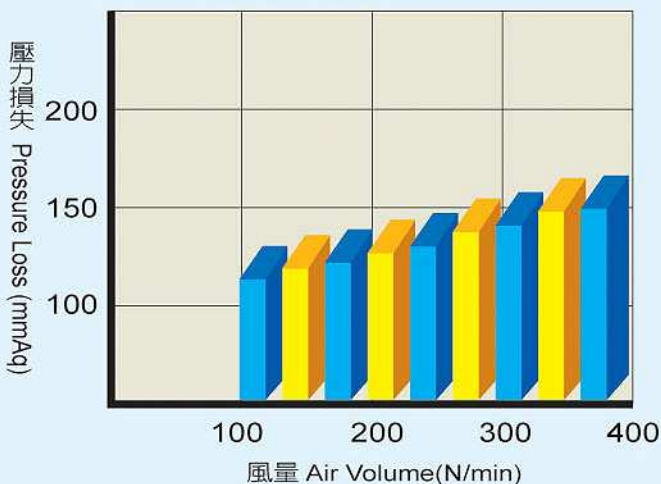
- When the air pressure is lower than 100 mmAq, the check-ball valve installed in the air outlet will be closed automatically to prevent wastewater from flowing back.
- Excellent corrosion resistance. Made of high-quality compound material of ABS whose temperature resistance and softening temperature are much better than those of ordinary ABS material.
- The valve gate is made of synthetic resin, with features such as weather resistance, corrosion resistance and low deformability. Three times durable than those made of rubber or PVC.
- The body of the valve can be adjusted with the air volume. Therefore, the pressure loss is low and variances are few.

## ● 產品規格 Specifications

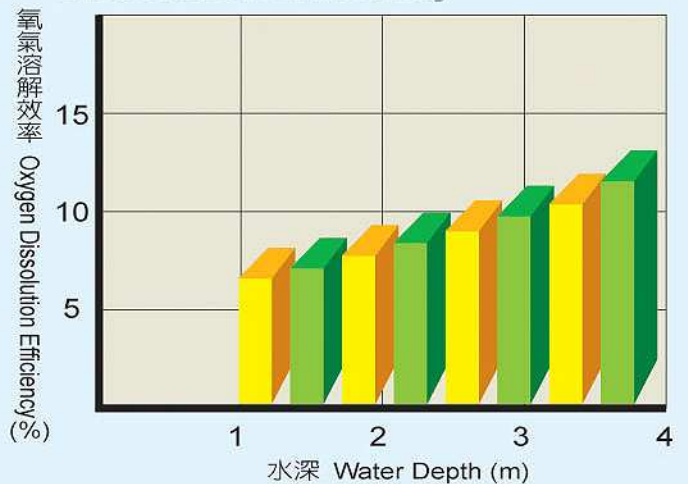


尺寸 Size	直徑 145m/m x H70m/m Diameter 145m/m x H70m/m	
標準通風量 Standard Air Volume	100 <sup>l</sup> /min~450 <sup>l</sup> /min	
安裝方式 Installation	向下或向上皆可 Downwards or Upwards	
安裝接合法 Installation Method	PT 1B 螺牙	
	PT 1/4 螺牙	
材質 Material	本體部 Body	ABS 樹脂
	瓣部 Valves	NBR 熱可塑型樹脂

## ● 風量與壓力損失的關係 Relation Between Pressure Loss & Air Volume



## ● 水深與氧氣溶解效率 Water Depth & Oxygen Dissolution Efficiency



## 高耐蝕性，壓力損失少，逆流時可完全關閉

High corrosion resistance, low pressure loss, and completely shut when backflow occurs.

- 利用水壓與閥材之特殊構造，當散氣終止時，其特殊結構可防止污水逆流產生。
- 特優良的耐蝕性，採用高品質ABS複合材質，其耐溫性、軟化溫度點，非一般泛用之ABS塑材可比較。
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- 閥本體因具有伸縮性，應通風量之增減，使噴氣口順應調整，故壓力損失少，其變化異常亦少。

- When termination of gas, the special structure to prevent sewage reflux, within water pressure and valve material.
- Excellent corrosion resistance. Made of high-quality compound material of ABS whose temperature resistance and softening temperature are much better than those of ordinary ABS material.
- The valve gate is made of synthetic resin, with features such as weather resistance, corrosion resistance and low deformability. Three times durable than those made of rubber or PVC.
- The body of the valve can be adjusted with the air volume. Therefore, the pressure loss is low and variances are few.



### 規格 Specifications

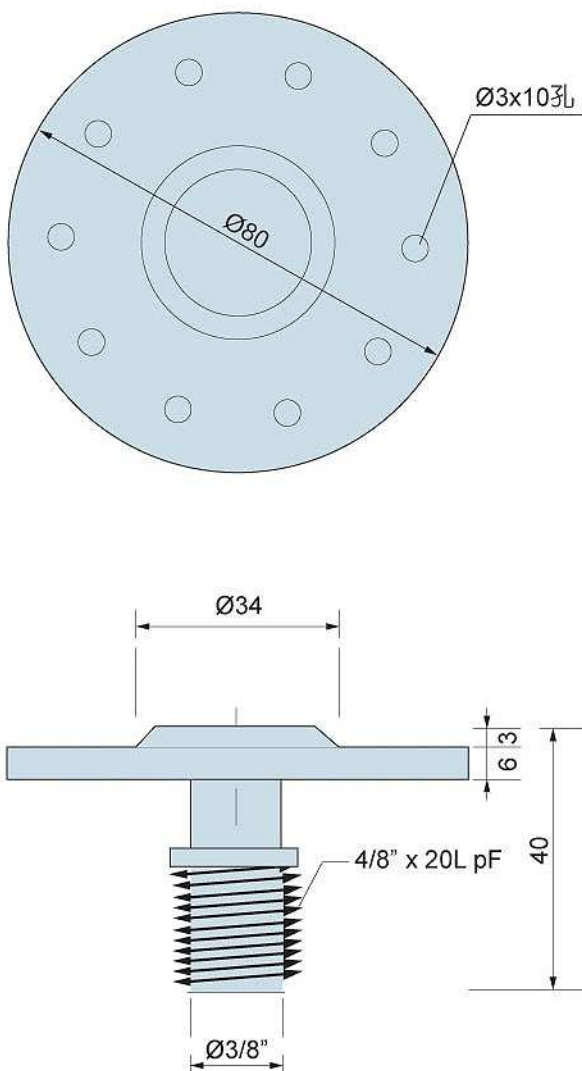
- 4/8"牙口， 3/8"入氣口
- 直徑：80m/m
- 高度：40m/m
- 通氣量：0.08~0.10m<sup>3</sup>/min
  
- 4/8 " Thread, 3/8 " Air intake
- Diameter: 80m/m
- Hight: 40m/m
- Air Volume: 0.08~0.10m<sup>3</sup>/min

### 特點 Feature

- 配合國內現成4/8"龍頭，安裝容易
- 構造堅固耐用
- 溶氧效率高，耐腐蝕性
- 有逆止作用，永不阻塞
  
- Easy to installed within the 4/8" faucet existing
- Rugged construction
- High oxygen efficiency with high corrosion resistance
- Having check device, never to be blocked

### 構造材質 Material

- 擴散蓋：Neporence Rubber耐酸鹼
- 擴散基座：ABS
  
- Scatter cover:Neporene rubber acid and alkaline proof
- Scatter base:ABS





# 散氣盤、管、鞍座 Aerator Adapter

本體部採用高級強化塑鋼一體成型設計、機械強度超高、使用壽命長。

The body part of DK series is made of fiber reinforced plastic as a monocoque structure. It is durable and with strong mechanical strength.



# 散氣盤、管、鞍座 Aerator Adapter

## 結構 Structure

DK系列產品的本體部採用高級強化塑鋼一體成型設計、機械強度超高、使用壽命長。

The body part of DK series is made of fiber reinforced plastic as a monocoque structure. It is durable and with strong mechanical strength.

## 密封圈 Seal Ring

管壁接觸面採用5.5環形止洩帶NEWPLAN有效制止曝氣管線中的空氣側漏。

A 5.5 pipe seal ring NEWPLAN is attached to the contact surface of the pipe, effectively stopping air leaks in the aeration pipe.

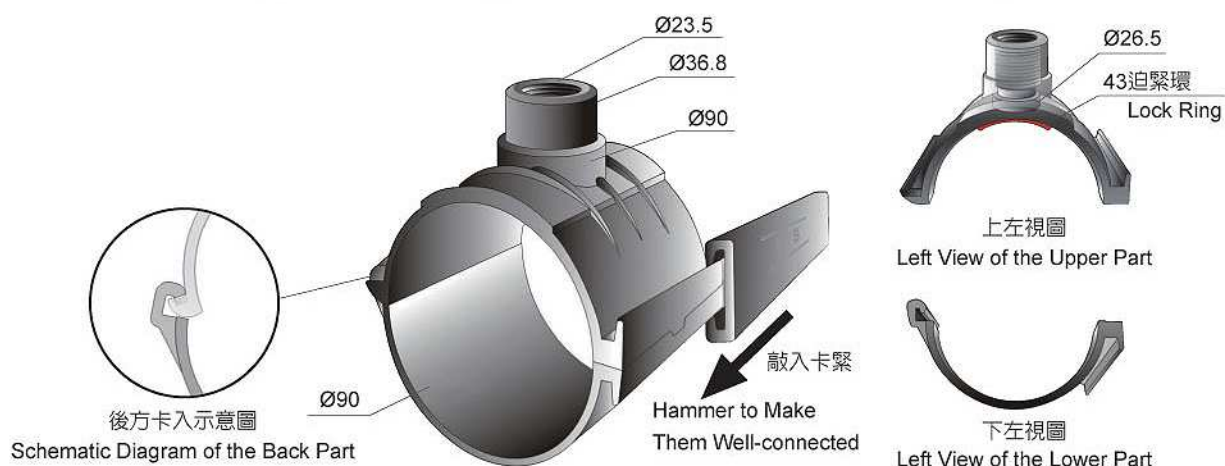


## 優點 Advantage

- 機械强度高不易斷裂
- 節省施工成本
- High mechanical strength, not easy to fracture.
- Acid and alkaline proof.
- 安裝容易
- 耐酸鹼
- Saving installation costs.
- Wedge-shaped lock ring.
- 鍍型迫緊
- 適用性高
- Easy installation.
- High applicability.

## 單母牙散氣盤鞍座結構示意圖

### Schematic Diagram of Single Screw Nut Aerator Adapter



## 規格表 Specifications

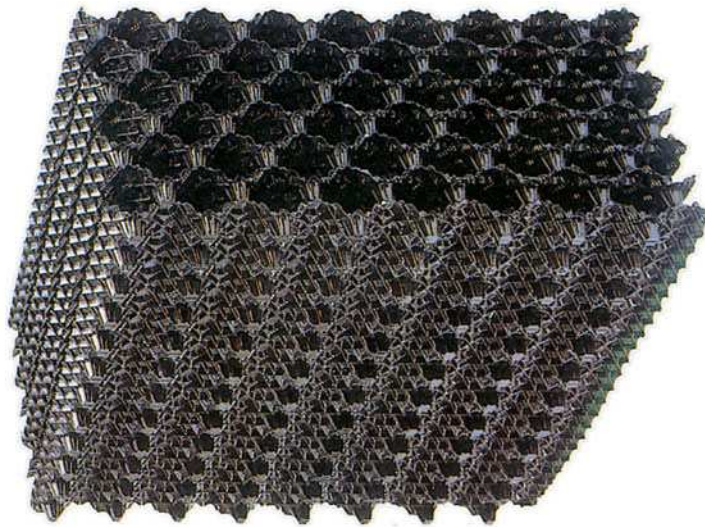
單位unit : mm

Model	Dimensions	Thread	Material
DK-2-01	Ø61mm X 4mm	3/4"NPT	尼龍+纖維 Nylon + Fiber
DK-3-01	Ø91mm X 4mm	3/4"NPT	尼龍+纖維 Nylon + Fiber
TU-3-01	Ø91mm X 6mm	3/4"PT	尼龍+纖維 Nylon + Fiber
TU-3-02	Ø91mm X 6mm	3/4"PT	尼龍+纖維 Nylon + Fiber



# 高性能接觸濾材

## High-performance Contact Filter



## 規格 Specifications

產品名稱 Model No.	目寬 Mesh m/m	比表面積 Specific Surface m <sup>2</sup> /m <sup>2</sup>	空隙率 Void Fraction %	原始板厚 Original Thickness m/m	座屈強度 Buckling Strength kg/m <sup>2</sup>	材質 Material	尺寸 Size m/m
PH-40	40	147	99.0	0.3 ~ 0.45	1000~1200 以上 Over 1000~1200	PE	長 x 寬 x 高 L x W x H
PH-56	56	110	99.5	0.35~ 0.5	1000~1200 以上 Over 1000~1200	P.V.C.	500      500
PH-80	80	56	99.6	0.4 ~ 0.55	1000~1200 以上 Over 1000~1200	A.B.S.	1000 x    x 1000      1000

(規格品外之尺寸，可應需求變更) (The sizes can be adjusted in accordance with the demands.)

## 產品的特性優點

- 比表面積大處理能性提高。
- PVC材質、機械強度大、充填作業安全性佳，且不易斷裂、損害、磨損，故使用壽命長。
- 濾材間隙大，故不易阻塞。
- 水的流通率良好。
- 浮游物捕捉性極高。
- 接觸面設計兼顧生物泥膜附著性與剝落性。
- 安裝簡單，價廉物美。

## Advantages

- The specific surface is large, increasing the processing performance.
- Made of PVC. The mechanical strength is strong and the filling process is safe, difficult to fracture, wear and tear. Therefore, it is durable.
- The spacing among filters is large; difficult to be blocked.
- The circulation rate of water is fine.
- The capture performance of floating particles is excellent.
- The contact surface is designed based on both adhesion and exfoliation of biological sludge.
- Easy installation. It is a real bargain.

## 最適合處理對象

- 下水及生活污水處理。
- 大小規模廢水處理。
- 三級處理。
- 低濃度廢水處理。
- 含難度分解性質之廢水處理。
- 利用為不易形成膠羽或較輕膠羽之生物處理。
- 對於污水之處理，處分困難者不論其水質、水量，可適用本法之產品污泥量少之特性處理之。

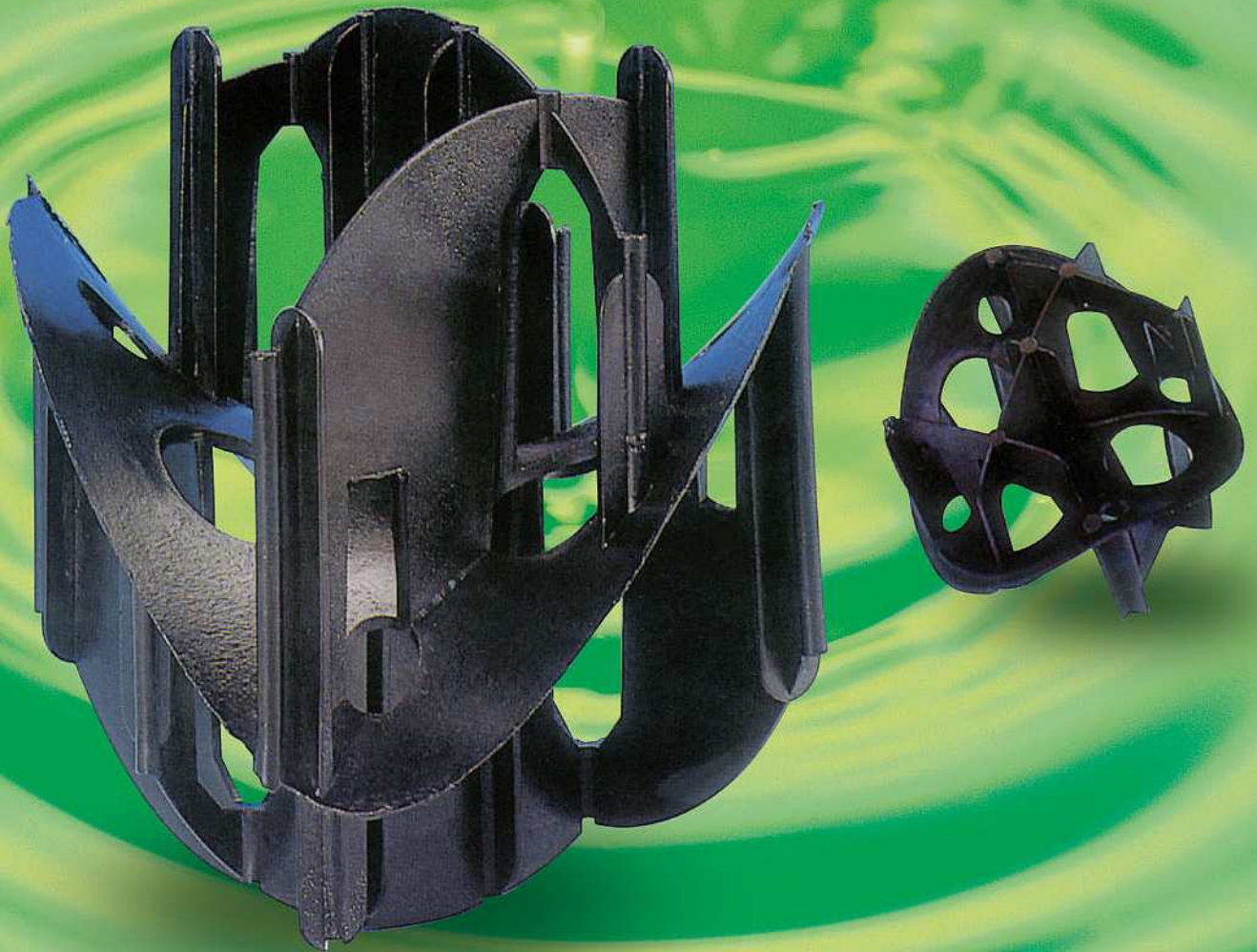
## Applications

- Sewer treatment and domestic sewage treatment.
- Wastewater treatment.
- Tertiary treatment.
- Low-strength wastewater treatment.
- Treatment of wastewater that is not easy to be dissolved.
- The biological process that forms less floc.
- As for the sewage treatment, no matter how the quality and quantity the water is, those that are not easy to be processed can be done based on the feature of the product; that is, it produces less sludge.



# 球狀生物濾材

## Floating Balls



將**浮動球散亂地投入**接觸曝氣槽內，它們彼此間會自然地形成固定濾床，**不需要預做濾材支撐裝置**。因為浮動球比重小於1，填充的浮動球會像冰原一樣浮在水中，大部分在水面下，再加上其特殊形狀互相組合，浮力和壓力均衡結果，形成團塊狀的完全固定濾床。

因為本產品的特殊設計，浮動球彼此間以點的接觸，**絕沒有面的接觸**，其特性除了有效過濾表面積大，空隙率大之外，被處理水通過濾床時，造成如迷宮般亂流，**增加與濾床生物膜接觸次數**，因此對有機污染物等，去除率提升許多。

除上述特性外，在使用浮動球時，**不需要逆洗用配管**，只要在逆洗時，將送風量提高到平時曝氣量兩倍以上運轉幾分鐘，就能夠將多餘污泥剝離。在施工時節省大筆管線費用。

- 用途：
1. 生活污水之處理。
  2. 低濃度廢水處理。
  3. 壓氣濾床填充材料。
  4. 廢氣吸收塔填充材料。
  5. BOD, COD的三級處理用。

Scattering the floating balls into the aeration tank, and they will naturally form a fixed filter bed. No pre-filter support is needed. Because the specific gravity of floating balls is less than 1, the floating balls will be floating as ice in the water, mostly underwater. Moreover, with combination of the unique shapes and equilibrium of buoyancy and pressure, the floating balls thus form a fixed filter bed.

Due to the special design, the floating balls contact one another by points rather than surfaces. Beside the large effective filtering surface and great void fraction, the treated water running through the filter bed causes turbulence like a labyrinth, increasing the contacts with biofilms of the filter bed; therefore, the removal rate of organic pollutants is greatly enhanced.

In addition to the features mentioned above, no backwash piping is needed when using floating balls. All we have to do is increase the air volume up to twice than usual for a few minutes, and the sludge will then be exfoliated. Save lots of costs on piping during construction.

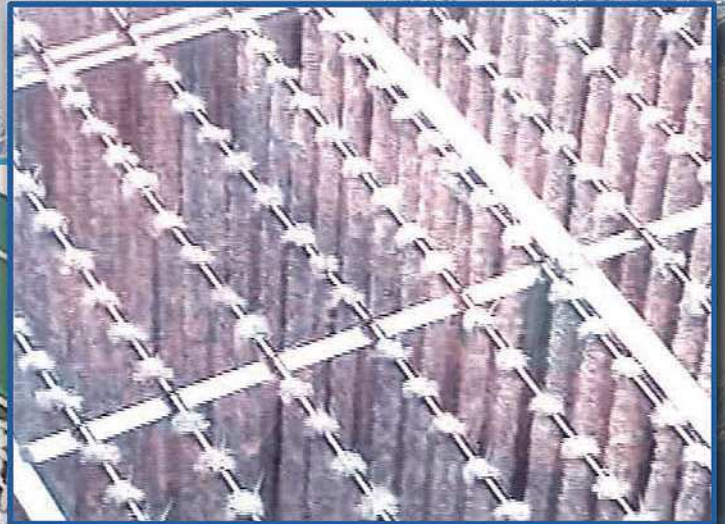
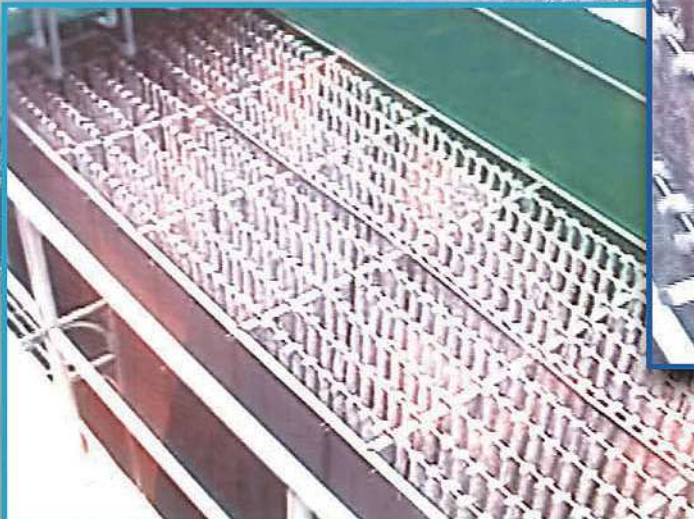
## 規格 Specifications

名稱 Model No.	100	125	150
材質 Material	聚丙烯 Polypropylene	聚丙烯 Polypropylene	聚丙烯 Polypropylene
尺寸 Size	Ø100 mm	Ø125 mm	Ø150 mm
比重 Specific Gravity	0.92	0.92	0.92

名稱 Model No.	100	125	150
比表面積 Specific Surface	70m <sup>2</sup> /m <sup>3</sup>	60m <sup>2</sup> /m <sup>3</sup>	50m <sup>2</sup> /m <sup>3</sup>
孔間隔 Hole Spacing	80	90	100
空隙率 Void Fraction	95 c/o	96 c/o	97 c/o
比重 Specific Gravity	1400個/m <sup>3</sup>	800個/m <sup>3</sup>	500個/m <sup>3</sup>



# 繩狀接觸濾材 Funiform Applying







## 規格表 Specifications

型號 Model No.	外徑 Outer Diameter(ø)	表面積 Surface Area	空隙率 Void Fraction	引張強度 Tensile Strength
YJ-50	50 mm	10.4 m <sup>2</sup> /M	≥ 99%	85 kg/M
YJ-100	100 mm	12.4 m <sup>2</sup> /M	≥ 99%	125 kg/M
YJ-200	200 mm	24.8 m <sup>2</sup> /M	≥ 99%	180 kg/M

## 優點 Advantage

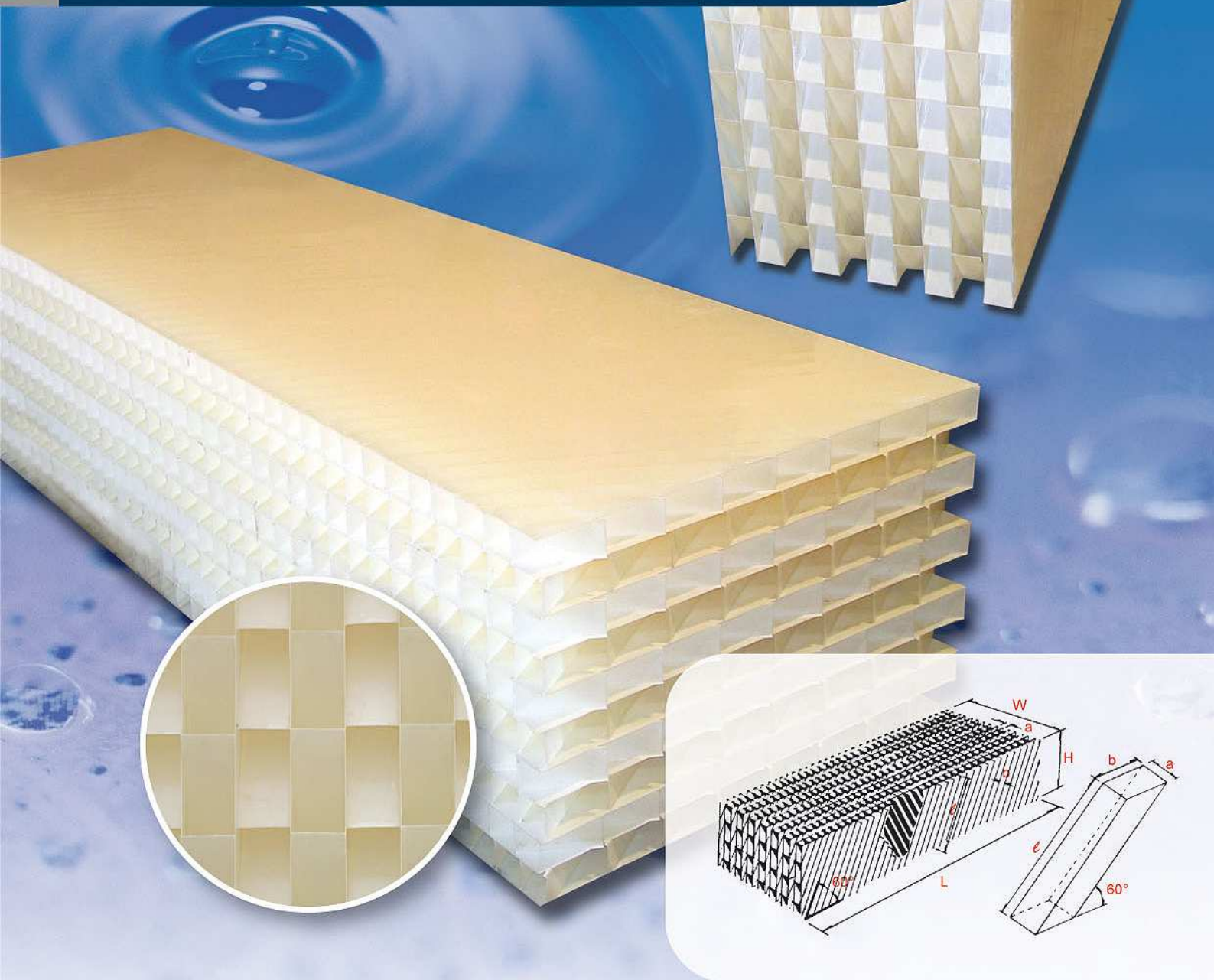
- 用P.P或P.E + POLYVINYL ALCOHOL為主體以放射圓弧狀纏繞而成，比表面積大。
- P.P或P.E + POLYVINYL ALCOHOL的引張強度達150kg/M以上，能夠抵抗曝氣池內的水流及附著污泥的自重力。
- 放射性圓弧狀結構適合微生物附著與衍生。
- P.P或P.E + POLYVINYL ALCOHOL生物膜形成後，反沖洗容易。
- The body, as a radiate arc-shaped entanglement made of PP or PE + POLYVINYL ALCOHOL, forms a large specific surface.
- The tensile strength of PP or PE + POLYVINYL ALCOHOL is up to 150 kg/M, which is able to withstand the water flow in aeration tanks and bear the dead load with sludge attached.
- A radiate arc-shaped structure is suitable for adhesion and multiplication of microorganism.
- After the biofilm of PP or PE + POLYVINYL ALCOHOL is formed, backwash becomes easy.

## 適用範圍 Applications

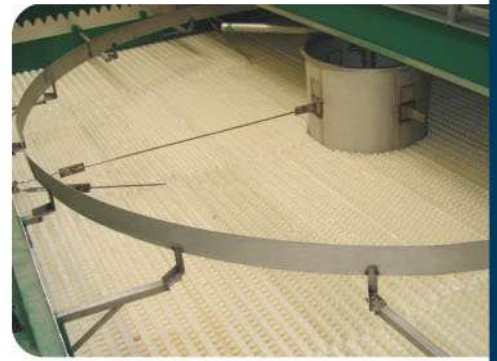
- 都市廢水處理。
- 工業廢水處理。
- 清淨水處理。
- 河川和湖泊曝氣。
- 養殖、養魚池、淡、海水用；循環過濾設備。
- Municipal wastewater treatment.
- Industrial wastewater treatment.
- Clear water treatment.
- Aeration of rivers and lakes.
- Aquatic products industry, for fresh water or seawater; as circulation filter systems.



# 傾斜管 HPVR Slanting Pipes



HPVR系列有較高的分子結構及光滑表面度，所以在沈澱、混凝、整流上均有一定優良的表現，是一般市售產品所無法相媲美的。獨特的Criss cross式結構設計能夠承受500公斤以上的自重力，大大提高使用的壽命和節省金錢的支出。HPVR系列的傾斜角度為60° H/h值為6，是單排式結構的2倍以上，所以在沈澱整流和二次混凝的作用之中，流體的膠羽粒子決不會附著於管壁上，所以能增加傾斜管功能的發揮。

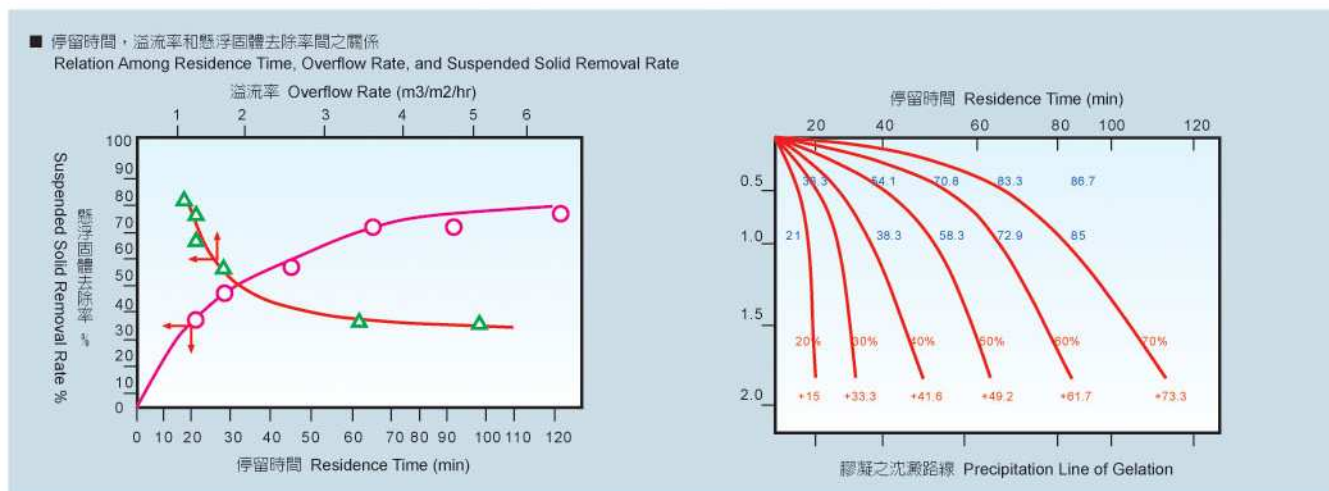


HPVR series have a higher degree of molecular structure and smooth surface; accordingly, they have better performance in precipitation, coagulation, and rectification. General commercial products can never be comparable.

The unique design of crisscross structure can bear more than 500 kg of dead load, greatly extending the service life and save expenditures. The tilt angle of HPVR series is 60 degrees, and H / h is 6, which is two times more than that of the single-row structure. Therefore, floc particles in the fluid will not be attached to the pipe surface during precipitation, rectification and secondary coagulation, and functions of the slanting pipes are accordingly improved.

## 特點 Features

- Criss cross式結構强度高，自重性低
- 安裝作業簡單
- 節省大量的混凝劑
- 流速穩定
- 混凝池中無死角
- 無靜電
- 能避免微膠羽粒子附著
- 停留時間短
- 管排數高混凝效果佳
- 膠羽顆粒對稱
- 層狀沈澱穩定
- 懸浮顆粒小
- The crisscross structure has high strength and low dead load.
- Easy installment.
- Saving a large amount of coagulants.
- Stable flow speed.
- No dead ends in the flocculation tank.
- Static-free.
- Preventing adhesion of micro-floc.
- Short residence time.
- A large number of the pipe row, enabling better coagulation.
- Floc particles are symmetric.
- Stable layer sediment.
- Small floating particles.



## 規格 Specifications

型號 Model No.	管徑 Pipe Diameter	a	b	μ	w	H	L	管排 Tube Row Numbers	材質 Material	板厚 Thickness
PR-52	50mm	50	50	600	500	520	2500	10	ABS or PVR	0.6~1.0mm
PR-75	50mm	50	50	860	500	750	2500	10	ABS or PVR	0.6~1.0mm
PR-80	50mm	50	50	910	500	800	2500	10	ABS or PVR	0.6~1.0mm



環境工程噪氣設備

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