

# 九譽有限公司

RSD/RCD-270/350 曝氣系統

微細氣泡曝氣盤安裝及操作維護說明書

Fine Reputation

一、概述 本產品採用聚丙烯(POLYPROPYLENE)為基座支撐膜片，曝氣膜採用複合工程橡膠(EPDM)膜表面出氣孔採用” I ” 字型孔，穿孔數量達 6,000 孔以上，具有高充氧能力。該散氣盤利用盤中式逆止閥有效避免污水回流至曝氣管路中並且能有效迅速撐開散氣盤膜片，適用於間歇性或連續性操作而膜片低阻力損失之設計適用於廣大的空氣流量範圍。

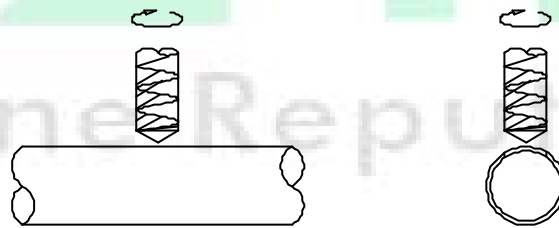
## 二、性能參數表

型號	膜片材質	底座	盤體直徑 (mm)	膜片直徑 (mm)	通氣量 (m3/h)	氣泡尺寸 (mm)	曝氣面積 (m2)	重量 (kg)	接續直徑 (mm)
270	EPDM	PP	270	225	1.0~6.0	1~3	0.0375	0.75	20
350	EPDM	PP	350	290	1.0~12.0	1~3	0.0638	1.00	20

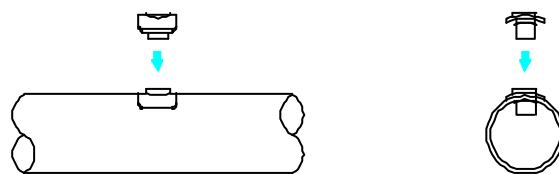
## 三、安裝程式及注意事項

1. 本產品安裝間距按各施工設計圖要求或依本公司推薦。
2. 安裝方式依設計及現場狀況
3. 安裝方法一：快速安裝
  - A. 使用  $\Phi 32$  MM 開孔器於配置完成之管路上開孔
  - B. 先將本公司專用之聚氯乙炔 (PVC) 快速接頭浸泡肥皂水後壓入開孔  $\Phi 32$  MM 管中連結方式則無需於螺紋纏繞止洩帶及 PVC 膠水，直接將散氣盤壓入  $\Phi 20$ MM 快速接頭擰緊即可 (依步驟一至四)

步驟一：鑽孔  $\Phi 32$ mm

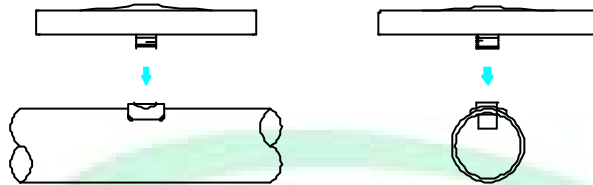


步驟二：放置 PCV 軟接頭

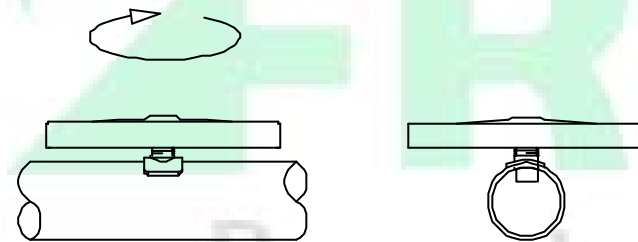




步驟三:將 RCD-270/350 壓入



步驟四:約八分滿牙,用手或工具順時針旋緊



C. 本公司專用之快速接頭適用 80/100 MM PVC 給水管管路或 Sch. 10S 以上之不銹鋼(SUS 304)管安裝且管壁厚度範圍 (3.0-5.5 MM) 為宜。

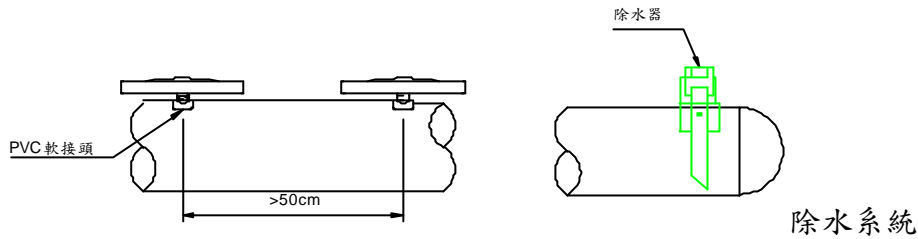
4. 安裝方法二：一般安裝

A. 使用於配置完成之管路上三通件 (PVC 管採專用膠水)

B. 將散氣盤外牙接頭 3/4" 螺紋上纏繞止洩帶將散氣盤擰緊即可

5. 依據不同安裝方法及現場狀況，製作空氣管路支撐架。詳情請諮詢工廠

6. 並於管路末端安裝排水系統如附圖

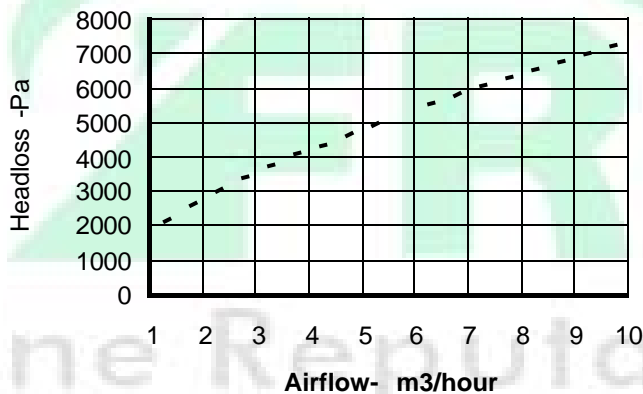


空氣經鼓風曝氣系統之鼓風機壓縮後的空氣溫度將會很高(通常到 $50^{\circ}\text{C}$ - $90^{\circ}\text{C}$ )，熱空氣中的水蒸氣、油份將在管中結露存積於曝氣管路中。除水系統能及時排出曝氣管路中的冷凝水以及鼓風機停機時通過曝氣器進入管路的污水，避免微孔的堵塞。

7. 散氣盤安裝高度：曝氣管路中心至地面距離一般應不大於 300 MM
8. 運送安裝時，不可與尖利的物品接觸，以免割破 EPDM 膜片
9. 曝氣盤必須存放於陽光不能直接照射的場所。
10. 曝氣盤進氣量愈大，EPDM 膜壽命相對減少。
11. 曝氣盤的壓力損失與風量成正比請參照樣本的曲線圖。

## DISC RCD-270

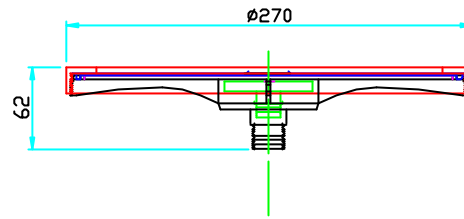
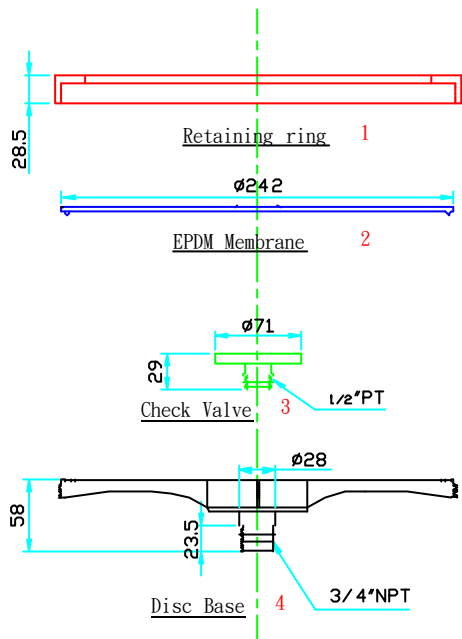
### Headloss



#### 四、異常現象及處理方法

現象	原因	處置
曝氣盤結合處漏氣	<ol style="list-style-type: none"> <li>1. 打孔過大</li> <li>2. 固定環未擰緊</li> <li>3. 散氣盤未擰緊於快速接頭內</li> </ol>	<ol style="list-style-type: none"> <li>1. 重新開孔或焊接</li> <li>2. 用鉗夾緊</li> <li>3. 用鉗夾緊</li> </ol>
曝氣盤不曝氣	<ol style="list-style-type: none"> <li>1. EPDM 膜未打孔</li> <li>2. 管路閥門關閉</li> </ol>	<ol style="list-style-type: none"> <li>1. 更換 EPDM 膜</li> <li>2. 檢視閥門</li> </ol>
曝氣盤曝氣不均勻	<ol style="list-style-type: none"> <li>1. EPDM 膜片破裂</li> <li>2. 管路阻塞</li> </ol>	<ol style="list-style-type: none"> <li>1. 更換 EPDM 膜</li> <li>2. 檢視閥門及排水系統</li> </ol>

#### 五、解剖圖例



項次	名稱	材質
1	固定環	PP
2	膜片	EPDM
3	逆止閥	EPDM+ABS
4	基座	PP



Fine Reputation

# **FINE REPUTATION CO.,LTD**

**RCD-270/350  
DISC DIFFUSER**



**operation & maintenance manual**

**Fine Reputation**

# RCD-270/350 disc membrane diffuser installation guide

## 一、Introduction

The base and retaining ring of disc diffuser made by POLYPROPYLENE, the membrane of diffuser made by EPDM, there are 6000 holes of in the membrane surface which their can produce 1-3 mm bubble and provide high oxygen transport efficiently, low head loss when the air blow in piping system. regarding check valve system can efficiently prevent wastewater into the disc when we stop the blower running. Therefore the disc diffuser can suitable for any application no matter continuous or intermit operation.

## 二、performance Table

model	memb rane	base	diam eter (mm)	Dia of memb rane (mm)	Air flow (m3/h)	Aeratio n area (m2)	service area (m2)	weig ht (kg)	conne ction (mm)
RCD-270	EPDM	PP	270	225	1.0~6.0	0.0375	0.5	0.75	20
RCD-350	EPDM	PP	330	290	1.0~12.0	0.0638	1.0	1.00	20

## 三、installation

1. the distance of diffuser is according to design data.
2. the connection and piping system is according to jobsite, please refer to figure 1



figure 1

3. installation method one : quick connection

3.1 please use a drilling machine to open F32 MM in pipe.(figure2)

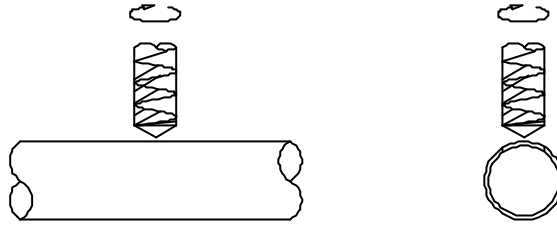


figure 2

3.2 please put pvc grommet in warm water before you will install diffuser system. Then pick up it and press into F32 MM hole. It is not necessary to entwine type seal and pvc glue around the thread of a screw of diffuser , after that please press the diffuser and set in pipe. please refer to figure 3

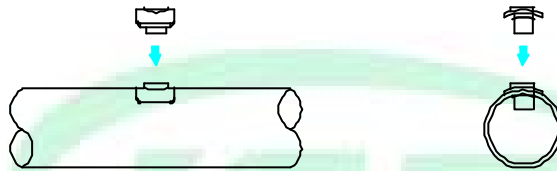


figure 3

3.3 the pvc grommet of diffuser is suitable for GB/T10002.1-1996 90MM 1.0MPa PVC or Sch 10s stainless pipe(SUS 304),please note that the range of thickness of pipe between 3.0-5.5 MM (figure 4)



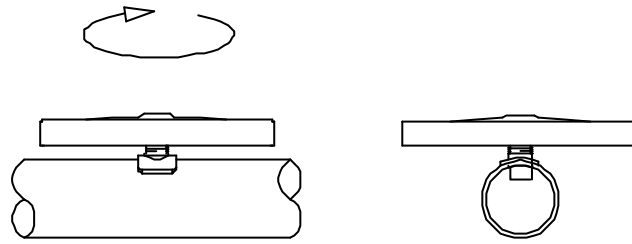
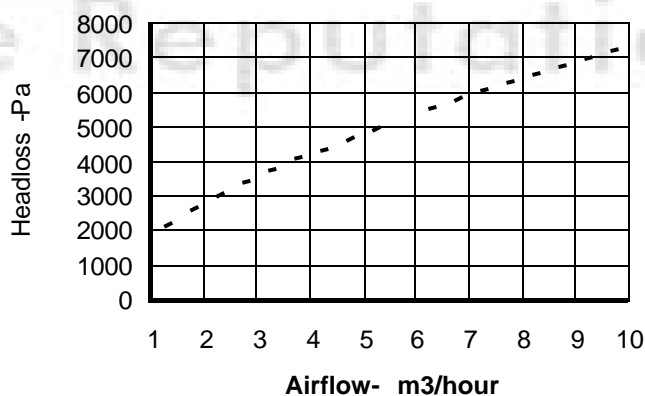


figure 4

4. installation method two : general
  - 4.1 please entwine type seal and paint the pvc glue around the thread of a screw of diffuser
  - 4.2 at the same time tighten the diffuser into tee pipe ◦
5. the support of piping system is according to engineering request ◦
6. for disc diffuser long life, please install purge system in end of piping system ◦ The purge system can efficiently prevent water accumulation in pipe ◦
7. in general speaking ,the height from ground to diffuser is 300 mm
8. be careful the membrane do not touch any sharpness when we deliver and install the diffuser ◦
9. the disc diffuser must store in a shady and cool place to avoid sunshine ◦
10. please use the diffuser in regular air flow for keeping good performance of EPDM membrane ◦
11. please refer to the catalogue and you will find the head loss of disc diffuser ◦

## DISC RCD-270

### Headloss



## RCD disc diffuser running and start up

### 四、RCD running

1. do not close the valve of the blower at random during the disc diffuser serve in aeration system ; please open the valve of purge system when the system will be closed for a long time (figure 5) , before stop the blower and aeration system, please make sure that the moisture have been purged from pipe (figure 6) .



figure 5



figure 6

2. restart the aeration system after long time, please lower the level of aeration tank if the blower and diffuser can not work normally .

### 五、RCD start up

1. please check all valves of piping system whether open or not during accomplish piping and support system .
2. please intake the water over 10-20 CM the diffuser and start the blower , at the same time check the condition of aeration . (figure 7)



figure 7

3. please stop the blower if the aeration condition is normal. We will restart the blower when the water level intake to correct height, meanwhile

please adjust graduation of valve to equalize for every aeration tank ◦

## RCD-270 /330maintenance

The unit is a fine pore aeration device that offers maximum benefits for oxygen transfer and mixing. Proper operation and maintenance of the diffuser can provide years of long term performance with minimum energy cost and minimum maintenance cost. For all fine pore diffusers, it is necessary to follow preventive maintenance procedures to sustain peak or optimum performance, prolong equipment life, and avoid emergency situations or a system failure. Proper maintenance procedures will also minimize the frequency of system interruptions. The following guidelines should be referenced in maintaining the diffuser system and EPDM diffuser media.

1. do not stop your aeration system at random except engineering process demanded ◦
2. the disc will be cleaned when the performance of disc is low.
3. **external inspection:**

Inorganic scaling is characterized by a granular mineral like precipitate that can form on the membrane surface. If brushing and hosing the diffuser media does not remove the scaling, contact us for further instructions.

Biological build-up is characterized by a moss like growth. The recommended cleaning procedure is to physically dislodge the growth either through gently brushing the substance off or using low or high pressure hosing. The hosing method is effective in removing loose surface deposits on the diffuser media. Maintain minimum air rate to the diffuser during hosing operation. The length of time required to remove deposits is dependent on the type of surface foulant, water pressure, distance from unit, etc. Typically, 5 to 10 seconds is required per unit.

4. **internal clean:**

Flush header assembly is prior to water flushing the laterals. Header, fill it with water and open the end lateral to create a in the header of at least 0.6 meter per second (if possible).

The laterals are to be individually flushed next. A flush velocity of 1.5 to 2.0 meter per second is recommended for lateral cleaning. Opening one isolation valve will produce a significant flushing action in the lateral as water is pumped through the header. The lateral end cap or one or two drilled air outlet holes should be uncapped to allow water and debris to be flushed out of the piping.

5. We recommend that the RCD-270 units be accessed on a regular basis (annually) to visually inspect the units. The RCD-270 aeration system is designed to allow the diffuser units to be accessed by dropping the water level in the basin being serviced. The air to the basin being serviced should be turned off to prevent the possibility of excessive airflows to the units or damage to the blower unit.

The following items may be helpful in servicing the Disc diffuser assemblies during periodic inspections or maintenance procedures:

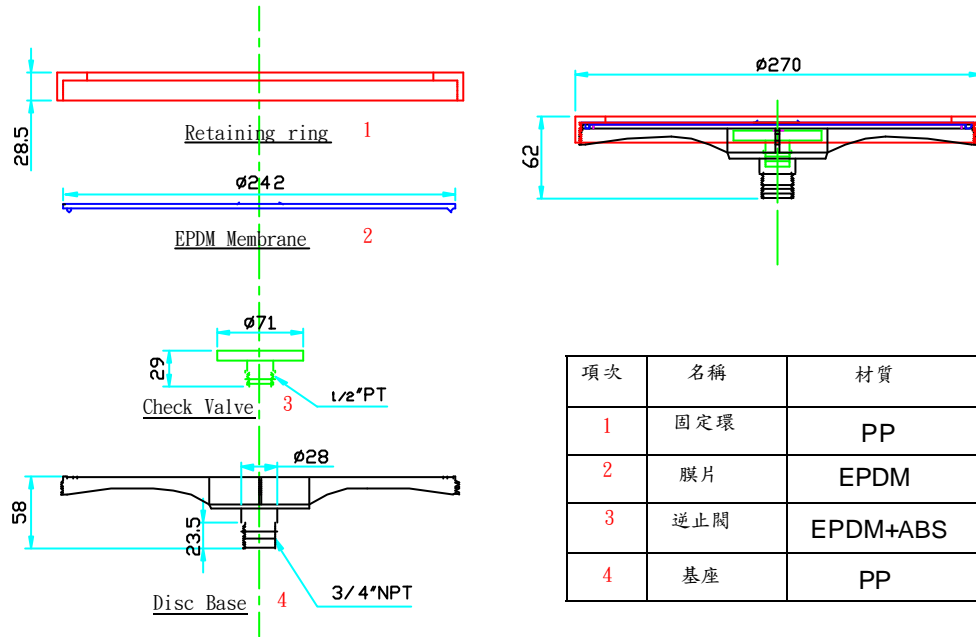
- 5.1. Ladder to access the de-watered basin
  - 5.2. Protective gloves and clothing
  - 5.3. Crimping or nipper pliers
  - 5.4. Long-handled bristle brush for cleaning assembly for observation
  - 5.5. Spare disc membranes
6. replace membrane (figure 8)
- If routine inspections reveal the need to replace a rubber disc membrane, the following guidelines should be followed.
- 6.1 Unscrew diffuser from saddle. This can be done gently by hand.
  - 6.2 Remove the retaining ring. This is accomplished by holding the base tight with a vice or wrench while unscrewing the ring.
  - 6.3 Gently pull the rubber disc membrane off the PP support. Care should be taken not to break or damage the PP support during this removal operation.
  - 6.4 Installation of the new sheath is done by reversing the above procedure. Apply non-petroleum lubricant such as liquid soap around the edges of membrane before tightening ring.



figure 8



CONSTRUCTION :



FINE REPUTATION CO.,LTD  
 TEL: +886-2-86981061 FAX: +886-2-869816064  
<http://www.diffuser.com.tw>  
 E-mail: fine.rpt@msa.hinet.net