

Fire and Smoke Dampers 防火兼排煙閘門

Model : FSD11-3V

型 號 : FSD11-3V



UL Listed

UL 555 Listing : R2619

(EMME)



FSD CATALOGUE AND
INSTALLATION MANUAL

防火排煙閘門的型錄和安裝手冊

Add : 19F-5, No.1, Pao-Sheng Rd., Yung-Ho
City, Taipei, Taiwan

TEL : 886-2-2232-8066 FAX : 886-2-2231-0285

地址: 台灣台北縣永和市保生路1號19樓之5

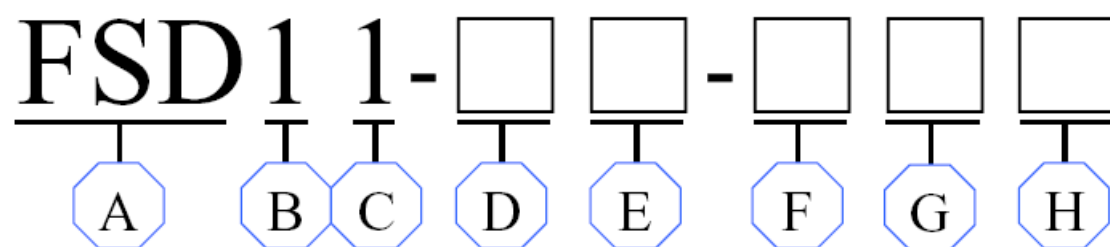
電話: 02-2232-8066 傳真: 02-2231-0285

Application and design 應用與設計

The **FSD11** Fire & Smoke Dampers employs triple-V blades and hat channel frame for point-of origin control of fire and smoke in static and dynamic smoke management systems. The Maximum Velocity Rating is 2000 ft/min (10.2 m /s), the Static Pressure Rating is 6 in-Wg (1.5 kPa) in the duct, the Fire Resistance Rating is 3 hr, and the air leakage is Class I level. It may be used for the fire wall, dividing wall (the brick wall or the gypsum board) and the floor with the vertical mounting.

FSD11 排煙防火風門使用 3V 形式的葉片與帽槽型框架用於靜態型式及動態型式之防火煙控系統，**FSD11** 適用環境最大風速 2,000 fpm (10.2 m/s)、最大壓力 6 in-w.g. (1.5 kPa)、防火時效 3 小時、洩漏等級 Class I，可垂直安裝在防火牆、分間牆區劃隔間(磚牆或石膏板牆)，亦可安裝於樓地板間之應用。

Model Description 型號說明



A. Product Type		F. Max Velocity	
FSD	Fire & Smoke Damper	1	10.2 m/s (2000 fpm)
B. Blade Type		G. Max Pressure	
1	Triple Vee Blade	C	1.5 kPa (6 in-Wg)
C. Air Leakage		H. Temperature	
1	Class I	A	74 °C (165°F) Operating
D. Fire Rating		B	100 °C (212°F) Operating
3	3.0hr	C	121 °C (250°F) Operating
E. Mounting		D	141 °C (285°F) Operating
V	Vertical	E	177 °C (350°F) Operating

Standard construction 標準結構

Frame: (123mm×23mm) galvanized steel hat channel with interlocking corner gusset.

Blades: (153mm×1.6mm) galvanized steel — triple — V.

Side-Plate: (300mm×1.6mm) galvanized steel.

Jackshaft: (12.7mm) diameter plated steel hex.

Linkage: Concealed in frame.

Bearings: Bronze oilite, sleeve-type.

Spring: Stainless steel.

Seals: Silicone blade edge seals and flexible metal mount.

Fusible Link Closure Temperature: 165°F · 212°F · 250°F · 285°F · 350°F

Minimum Size: 12" × 8" (305mm×203mm)

Maximum Size 36" × 36" (914mm×914mm)

外框：(123mm×23mm)之鍍鋅鋼材的帽型溝槽，採嵌入式結合。

葉片：(153mm×1.6mm) 葉片形式採 3V 型。

單邊側板：(300mm×1.6mm)鍍鋅鋼板。

中心軸：Ø 12.7mm 鍍鋅圓軸。

連接桿：隱藏於框架內。

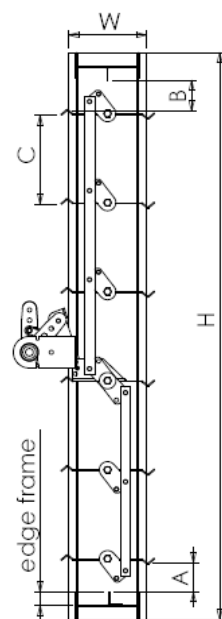
軸承：材質青銅，套筒型式。

扭簧：材質為不銹鋼。

氣密：使用矽膠材質氣密條並採彈簧片於葉片側邊與外框密合。

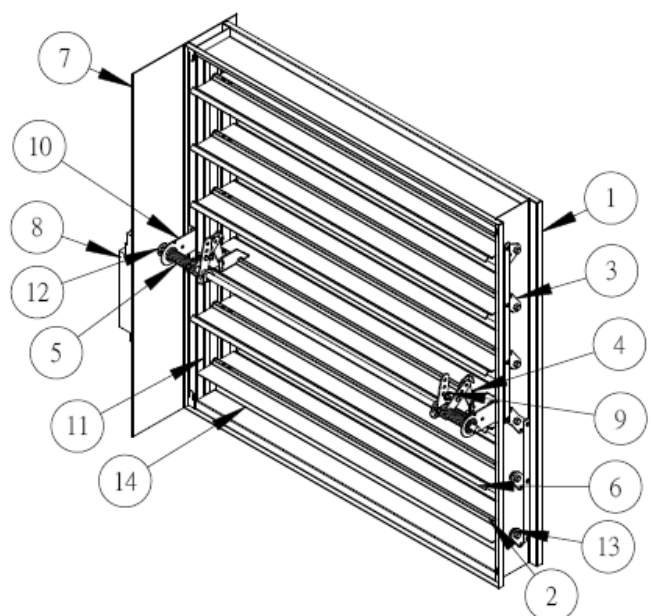
熔絲片關斷溫度：74°C、100°C、121°C、141°C、177°C

最小尺寸：(305mm×203mm) 最大尺寸：(914mm×914mm)



Component 開門零件圖

ITEM	NAME
1	Frame(框架)
2	Blade(葉片)
3	Concealed Linkage(連桿組)
4	Joint(膝關節組)
5	Spring(彈簧)
6	Blade Seal(氣密條)
7	Sleeve
8	Actuator(驅動器)
9	Bearing(滾珠軸承座)
10	Fusible Link(熔絲片)
11	Jamb Seal(氣密側封條)
12	Sealed Ring(氣密環)
13	Axle Bearing(六角軸套)
14	Block Frame(擋板)

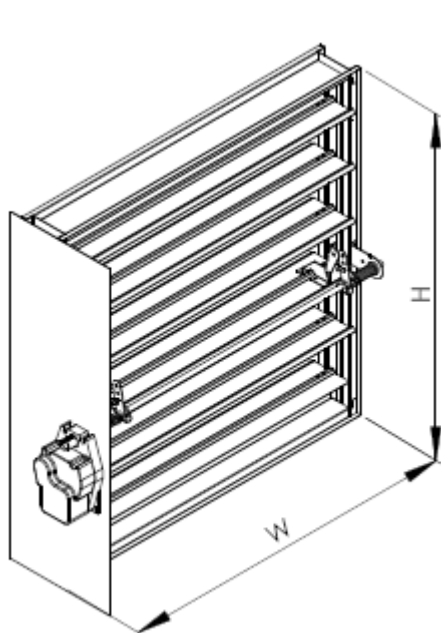


Options

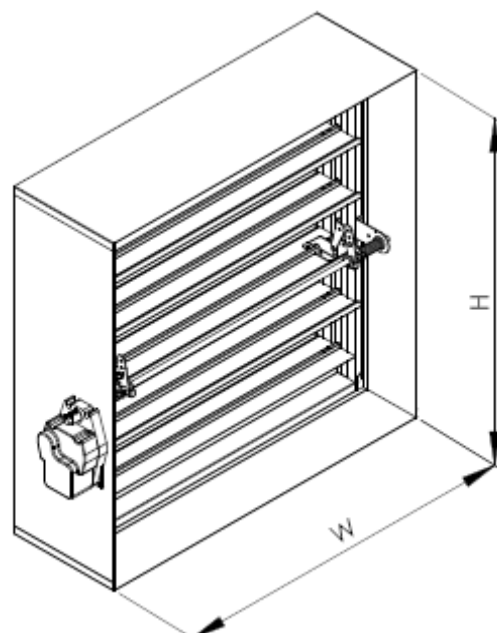
- ☐ Alternate actuator
 - ☐ 24 VDC ☐ 110 VAC ☐ 220 V AC
 - ☐ 9N-m ☐ 20 N-m
- ☐ Factory installed sleeve:
 - Gauge: ☐ 16# (1.6mm)
 - Length: ☐ 12"(305mm) ☐ 16"(406mm)
- ☐ Factory installed:
 - ☐ Side plate (Standard) ☐ Sleeve
- ☐ Fusible Link: ☐ 165°F ☐ 212°F ☐ 250°F ☐ 285°F ☐ 350°F

可供選擇

- ☐ 驅動器
 - ☐ 24 VDC ☐ 110 VAC ☐ 220 VAC
 - ☐ 9 N-m ☐ 20N-m
- ☐ 選擇安裝的套筒規格:
 - 板厚: ☐ 16# (1.6mm)
 - 深度: ☐ 12"(300mm) ☐ 16"(406mm)
- ☐ 安裝樣式選擇:
 - ☐ 單邊側板 (標準型) ☐ 套管
- ☐ 熔絲片: ☐ 74°C ☐ 100°C ☐ 121°C ☐ 141°C ☐ 177°C



Side plate (Standard)標準型



Sleeve (optional)選配型

DAMPERS INSTALLATION AND OPERATING INSTRUCTIONS

防火排煙閘門安裝與操作說明

RECEIVING AND HANDLING 收貨檢查及儲存

After receiving the damper, please check on the appearance and internal deformation or damage. If there is found to deformation or damage, please notice to the Company by letter or email imminently, the Company will identify the handling or assembly issues, and at the same time Repair or replace faulty parts will be organize. Be sure to check all the accessories and the component items are not losing. The Damper must be storage indoors and kept dry and clean place to prevent dust and fouling in all time.

在收到閘門後，請檢查是否有外觀上及內部上之變形或損壞。如果有發現到變形或損壞，將損壞部份以書面通知本公司，本公司會查明搬運或組裝問題，並同時將瑕疵部份修復或更換。請務必檢查所有附屬配件，並清點所有數量。閘門之存放，必須置於室內並保持乾燥及清潔防止灰塵及污損。

SAFETY WARNING 注意事項

Incorrect installation, adjustment, modification, use and maintenance may cause product damage, personal injury and other circumstances.

Before the installation, use and maintenance, please read the installation manual and maintenance manual first. The installation manual is for the user only, after the damper installation is complete, please give the final user of this manual.

不正確的安裝、調整、修改、使用及維修可能會造成產品損壞、人員受傷等情形。在安裝、使用及維修前，請詳讀安裝手冊及保養手冊。這份安裝手冊屬於使用者，在閘門安裝工程完成之後，請將本手冊交給最後之使用者。

WARRANTY 保固期

The Flowtech provide the products for one year warranty. Under the warranty period the dampers found in non artificial factors, Flowtech will repair or replace without any charges to customers. If the damage caused by the improper artificial use factors, then it will not be under warranty by Flowtech, the Company will not responsibility for the replacement of the product cost.

陽鼎公司於閘門交貨之後保固**一年**。在保固期內，閘門因非人為因素發現之損壞，陽鼎將免費為客戶負責維修或更換。如損壞係由不正確使用閘門所造成，則不屬於陽鼎公司保固之責任範圍，陽鼎公司將不負擔任何更換及重新安裝產品的費用。

CUSTOMER SERVICE CENTRE 客服中心

If there is any question, please contact with the customer service centre of our company.

TEL : +886-2-2232-8066 (Represent number)

FAX : +886-2-2231-0285

如有任何問題，請洽本公司客服中心。

TEL : (02) 2232 – 8066 (代表號)

FAX : (02) 2231 – 0285

Damper Sleeve :

The largest sleeve thickness can't exceed 3.43 mm (0.135 in) with no electroplates layer. Or it can't exceed 3.51 mm (0.138 in) with electroplates layer. This is the minimum sleeve thickness of the FSD :

Table 1

閘門套管

防火排煙閘門套管最大厚度

無電鍍層者，不得超過3.43 mm (0.135 in)。

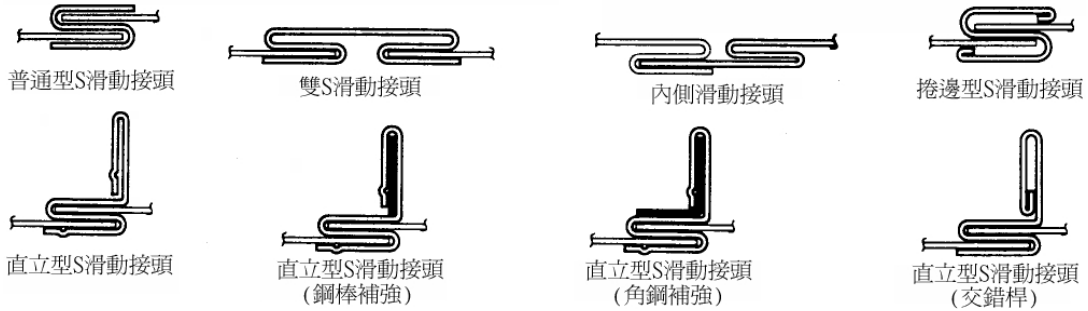
具電鍍層者，不得超過3.51 mm (0.138 in)。詳見Table 1

風管與套管連接方式 Type of Duct to Sleeve Connection	風管形狀 Duct	風管尺寸 Duct Dimension	套管最小厚度 Sleeve Gauge
固定接頭 Connect regularly	方形 rectangular	寬度:小於 (含) 914 mm (36") 或 高度:小於 (含) 610 mm (24") $W \leq 762 \text{ mm (36")}$ Or $H \leq 610 \text{ mm (24")}$	無電鍍層 Uncoated : 1.35 mm 具電鍍層 Galvanized : 1.42 mm
固定接頭 Connect regularly	方形 rectangular	寬度:大於 914 mm (36") 且 高度:大於 610 mm (24") $W > 762 \text{ mm (36")}$ And $H > 610 \text{ mm (24")}$	無電鍍層 Uncoated : 1.70 mm 具電鍍層 Galvanized:1.78 mm
安全脫鉤 (套管厚度小於 1.9mm) Break off relations safely	方形 rectangular	寬度 $w \leq 305 \text{ mm (12")}$ $305 \text{ mm (12")} < \text{寬度 } w \leq 762 \text{ mm (30")}$ $762 \text{ mm (30")} < \text{寬度 } w \leq 1372 \text{ mm (54")}$ $1372 \text{ mm (54")} < \text{寬度 } w \leq 2134 \text{ mm (84")}$ $2134 \text{ mm (84")} < \text{寬度 } w$	0.457 mm (0.018") 0.61 mm (0.024") 0.762 mm (0.030") 0.914 mm (0.036") 1.219 mm (0.048")
注意:套管厚度不得小於連接風管的厚度 Notice: The thickness of the sleeve pipe can't be smaller than the thickness of connecting the tuber pipe (Table 1)			

Slips 風管安全脫鉤

All the installing method of the dampers, ducts, and the sleeve must be conform to the regulation of NFPA - 90A, SMACNA.

防火閘門的安裝及所有風管接頭與套管的連接都必須依照NFPA - 90A、SMACNA防火、排煙及輻射風門安裝指南規定。



Duct-sleeve connections 安全脫鉤型式

Duct - sleeve connections listed in UL555, fourth edition, "Standard For Fire Dampers". The thickness of the sleeve had smaller than the 1.9mm. Joints using connectors of the type shown in Fig. 6. Above with a maximum of two M5 (No.10) sheet metal screws on each side and the bottom located in the center of the slip pocket and penetrating both sides of the slip sides.

所有風管與套管接頭也必須依照 UL 555 規定。風管與套管接頭可以是固定接頭或安全脫鉤兩種型式，套管厚度小於 1.9mm，必須使用安全脫鉤。安全脫鉤各類型式見圖五所示。風管與套管接頭如不使用安全脫鉤，則套管厚度須依照表一之防火閘門套管最小厚度規定，或是接頭必須通過風管衝擊試驗。安全脫鉤接頭，在風管、套管及滑動接頭袋中心底面最多釘兩個 10 號（直徑 4.8 mm）金屬板螺釘，該螺釘應貫穿滑動接頭袋兩側。安全脫鉤接頭使用在水平風管（垂直防火閘門）之頂端、底端或側端，或使用在頂端及底端。

Joints using connectors of the type shown in Fig. Above on the top and the bottom and using flat drive slips not exceeding 510 mm (20") duct height on the sides.

可在兩側端搭配使用下圖所示之平傳滑動接頭(長度不得超過 510 mm 《20 in》)。使用安全脫鉤接頭得使用在垂直風管(水平防火閘門)之各端，或使用在垂直風管之對應兩側，也可以在另兩對應側搭配使用圖所示之平傳滑動接頭(長度不得超過 508 mm 《20 in》)。

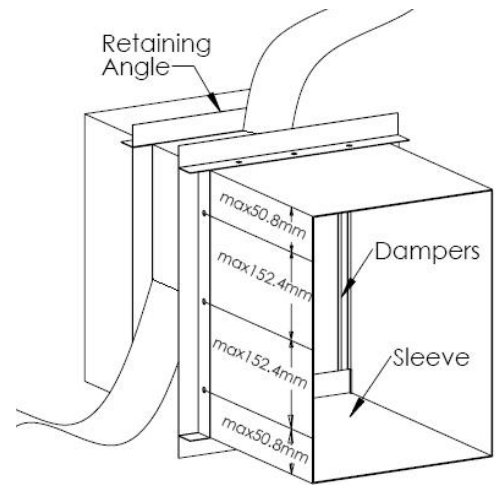


Flat drive slip 平傳滑動接頭

Retaining Angles Fastened to Sleeve

Damper surrounded by a row of fasteners must be fixed in the framework of the gate on the casing. Fastener from the center line of maximum 152.4mm, from the corner of a maximum of 50.8, at least four fasteners on each side (2 frames on each side) Fixation fasteners can be used the following:

1. Welding or soldering
2. Metal plates and screws
3. Screw and nut
4. Steel rivets



Retaining angle

防火閘門與套管固定方式

防火閘門四面必須以一排扣件在框架上固定閘門套管。扣件距離中心線最大為 152.4 mm (6")，距離角落最大為 50.8 mm (2")。每一面至少要有 4 個 (每邊框架 2 個) 扣件。扣件的固定方式可以採用：• 點焊或焊接 • #10 號 (4.8 mm) 金屬板螺釘 6 mm (1/4") 螺絲及螺帽 • 4.8 mm (3/16") 鋼製鉚釘。

The sleeve and Damper with the corner of the gap, the diameter must be at least 3.2 mm (1/8") to making the rod through the hole.

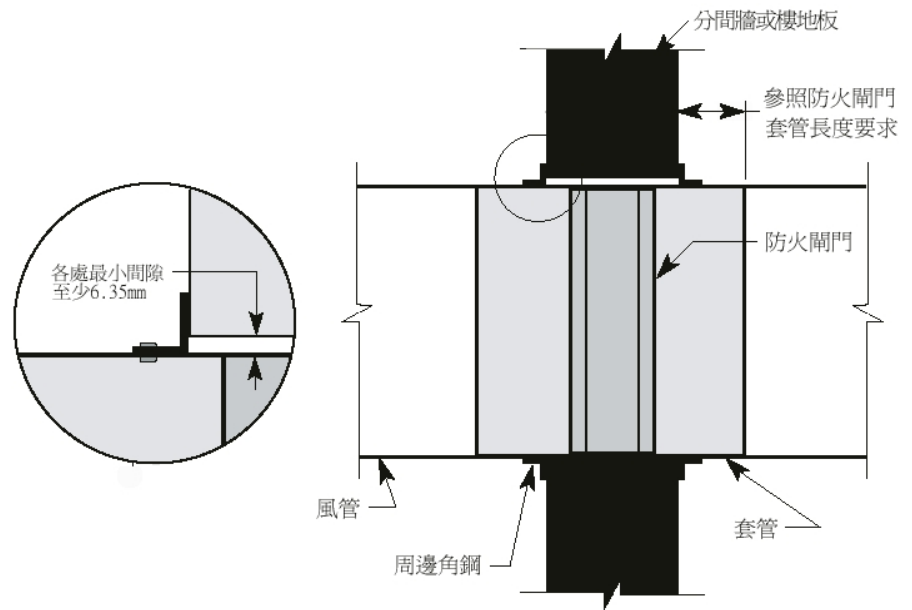
套管與閘門在角落的間隙，必須不能使直徑 3.2 mm (1/8") 的圓棒穿過整個開口。

Expansion Space

Fire Damper between the partition of the wall or floor linking space must maintain an appropriate gap to allow expansion of the gate will be extended in the heated state, therefore the partition of the wall or floor linking space must be large than the gate casing (see picture below). In calculation with damper of the space to install in every 1m must be reserved at least 10.4 mm of the length by their width or height the minimum length can not be less than 6.35 mm (1 / 4 "), and it also can not be greater than 10.4 mm/1m by their width or height in adding 25.4 mm (1 ")

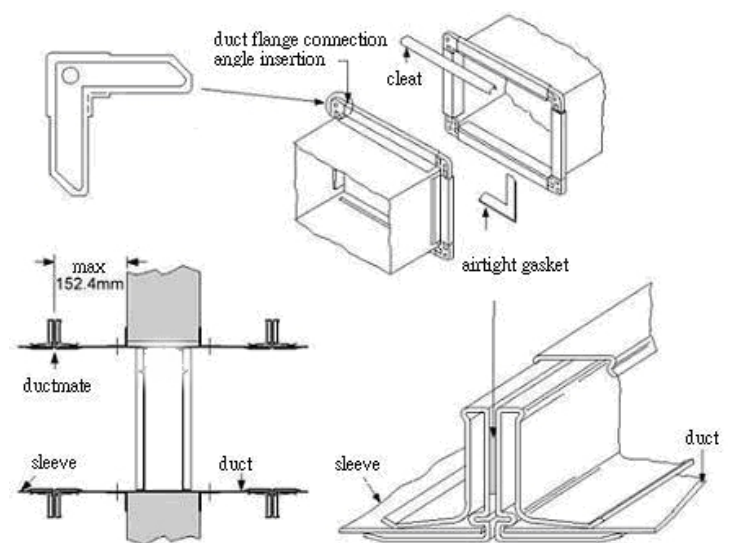
間隙

防火閘門套管與分間牆或樓地板開口必須保持適當的間隙，以使得閘門在受熱狀態可以膨脹延伸，因此分間牆或樓地板開口必須要比閘門套管大(見圖三所示)。計算防火閘門套管與分間牆或樓地板開口的間隙，防火閘門每1m寬度或高度，必須要預留至少10.4mm的間隙值。間隙值最小不得小於6.35 mm (1/4")，且不得大於10.4mm / 1 m寬度或高度加上25.4 mm (1")。



Duct flange 風管法蘭

Duct flange is the other slip for connecting the damper or the duct.
風管法蘭是為了連接閘門或風管的另一種滑動接頭。

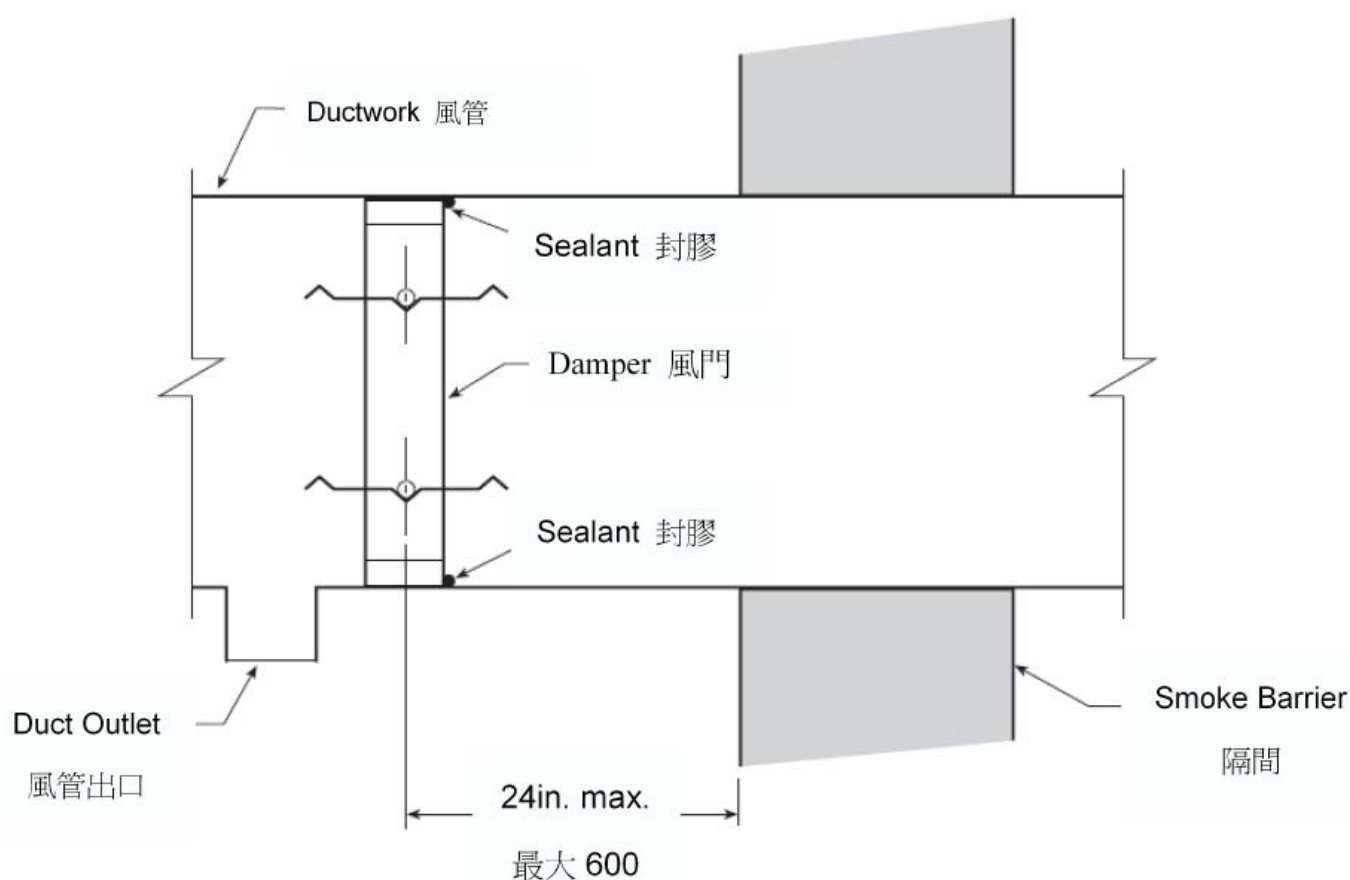


Duct Flange

FLUID SEALANT (CAULKING) 密封膠

Firing prevention in the dampers can use the fluid sealant between peripheral angle steel and sleeve pipe, and peripheral angle steel and dividing among a wall or floor structure. But fluid sealant can't use in dampers sleeve pipe of firing dampers and divide rooms of wall or floor open one's mouth ring area between definitely. We suggest to use this kind of silicone. Dow-Corning 790, Dow-Corning 732, GE RTV108..

防火閘門可以使用密封膠在周邊角鋼與套管之間，以及周邊角鋼與分間牆或樓地板結構之間。但密封膠絕不可使用在防火閘門套管與分間牆或樓地板開口之間的環狀區域，我們建議使用 Dow-Corning 790, Dow-Corning 732, GE RTV108 類型的矽膠。





陽鼎實業股份有限公司
FLOWTECH CO., LTD.

■ **TAIPEI** 台北總公司

19F-5, No. 1, Pao-Sheng Rd., Yuan-Ho City,
Taipei, Taiwan, R.O.C

台北縣永和市保生路1號19樓之5

Tel : +886 2-2232-8066 Fax : +886

2-2231-0285~6

E-mail : ydc28066@ms8.hinet.net ,

flow.tech@msa.hinet.net

■ **Lab** 實驗室

No.102, Neihu 1st Rd., Dongshan Township,

Yilan County, Taiwan 269

台灣宜蘭縣冬山鄉內湖一路102號

■ **Factory** 冬山廠

No.658, Meilin Rd., De-an Village, Dongshan

Shiang , Yilan County 269, Taiwan, R.O.C

269 宜蘭縣冬山鄉得安村梅林路 658 號

Tel:+886 3-9612 449 Fax:+886

3-9615-843

CNo. :