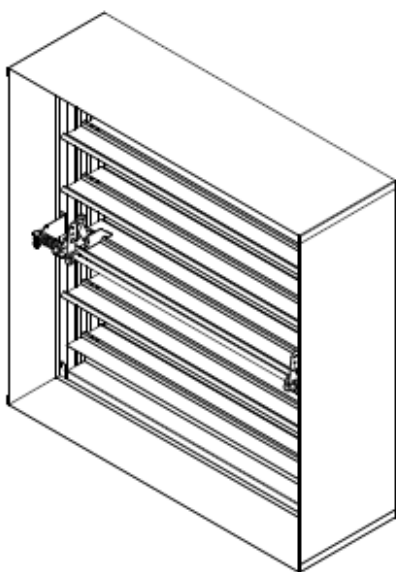
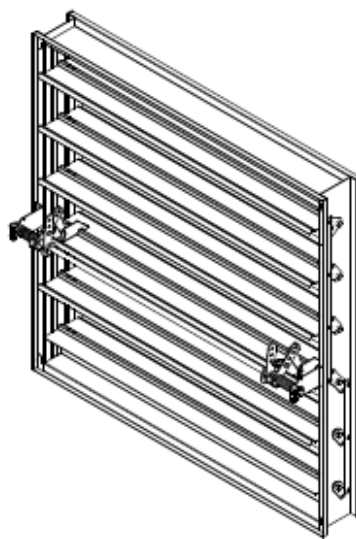


Fire Damper of Blade

FDB Series



Sleeve (optional)選配型



No Sleeve (Standard)標準型

Add : 19F-5, No.1, Pao-Sheng Rd., Yung-Ho
City, Taipei, Taiwan R.O.C.
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:02-22328066 傳真:02-22310285

UL Listed
UL 555 Listing : R2619
(EMME)



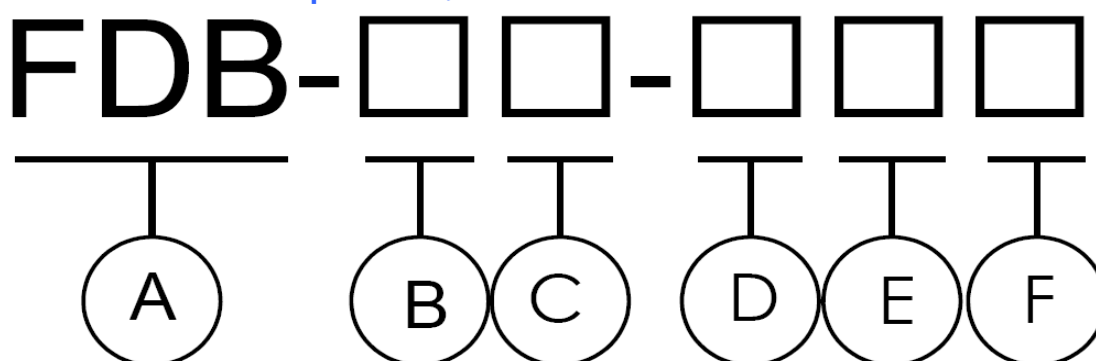
APPLICATION

Model **FDB-3V** is a multi-blade fire damper with triple-Vee blades. The **FDB-3V** has been qualified to **2000 fpm (10.2 m/s)** the dynamic closure Pressure Rating is **6 in-Wg (1.5 kPa)** in the duct, the Fire Resistance Rating is **3 hr**, It may be used for the fire wall, dividing wall (the brick wall or the gypsum board).

設計與應用

FDB-3V 為多葉式(3V 型)之防火風門，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**，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		E. Max Pressure	
FDB	Fire Damper of Blade	A	0.5 kPa (2 in-Wg)
B. Fire Rating		B	1.0 kPa (4 in-Wg)
1	1.5hr	C	1.5 kPa (6 in-Wg)
3	3.0hr	F. Temperature	
C. Mounting		A	74 °C (165°F) Operating
V	Vertical	B	100 °C (212°F) Operating
H	Horizontal	C	121 °C (250°F) Operating
D. Max Velocity		D	141 °C (285°F) Operating
1	10.2 m/s (2000 fpm)	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.

Jackshaft: (12.7mm) diameter plated steel hex.

Linkage: Concealed in frame.

Bearings: Stainless steel oilite, sleeve-type.

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)

框架：(123mm×23mm)，鍍鋅鋼材的帽型溝槽，使用嵌入式結合。

葉片：(153mm×1.6mm) 葉片形式採 3V 型。

中心軸：ø12.7mm 鍍鋅圓軸。

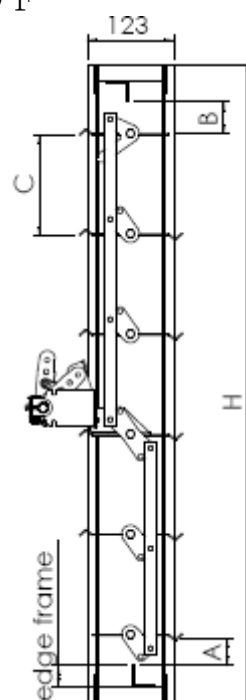
連接桿：隱藏於框架內。

軸承：材質為不銹鋼。

熔絲片關斷溫度：74°C、100°C、121°C、141°C、177°C

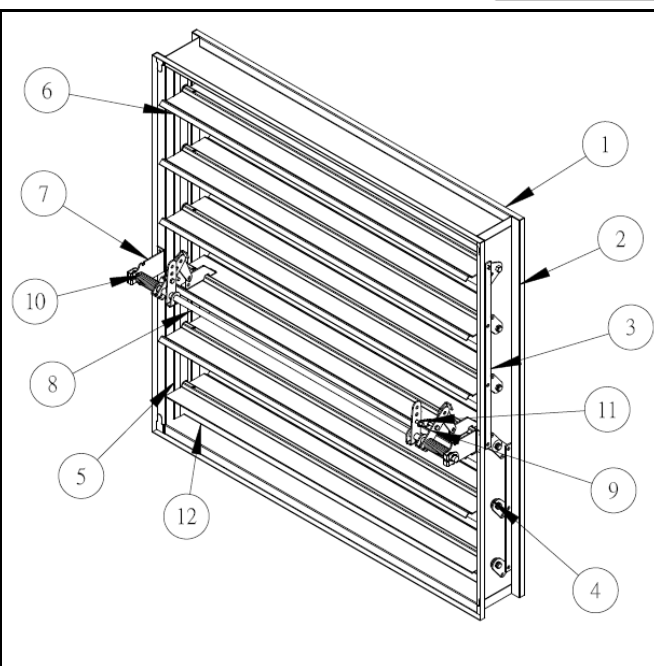
最小尺寸：12" × 8" (305mm×203mm)

最大尺寸：36" × 36" (914mm×914mm)



閘門零件圖 Component

ITEM	NAME
1	Top & Down Frame(框架上&下)
2	Side Frame(側邊框架)
3	Concealed Linkage(連桿組)
4	Bearing(六角軸套)
5	Jumb Seal(不銹鋼氣密側封條)
6	Blade(葉片)
7	Clip Shaft Base(挾持式固定座)
8	Jackshaft(軸心)
9	Joint(膝關節組)
10	Spring(彈簧)
11	Fusible Link(熔絲片)
12	Block Frame(擋板)



Options

☐ Factory installed:

☐ No Sleeve (Standard) ☐ Sleeve

☐ Factory installed sleeve:

Gauge: ☐ #16 (1.6mm)

Length: ☐ 12"(305mm) ☐ 16"(406mm)

☐ Fusible Link:

☐ 165°F ☐ 212°F ☐ 250°F ☐ 285°F ☐ 350°F

配件選擇

☐ 工廠安裝選項:

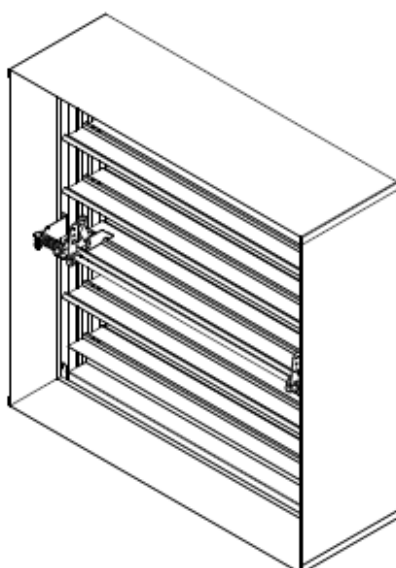
☐ 無套管(標準型) ☐ 套管型

☐ 工廠安裝 Sleeve 選項:

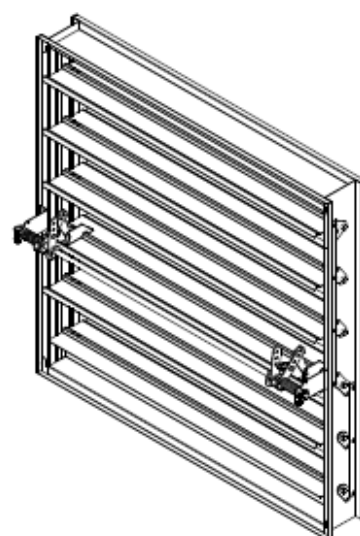
板厚: ☐ #16 (1.6mm)

深度: ☐ 12"(305mm) ☐ 16"(406mm)

☐ 熔絲片: ☐ 74°C ☐ 100°C ☐ 121°C ☐ 141°C ☐ 177°C



☐ Sleeve (optional) 選配型



☐ No Sleeve (Standard) 標準型

DAMPERS INSTALLATION AND OPERATING INSTRUCTIONS

防火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 FDB :

Table 1

閘門套管

防火閘門套管最大厚度

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 1.9mm) Break off relations safely (the thickness of sleeve pipe is smaller than the 1.9mm)	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)			

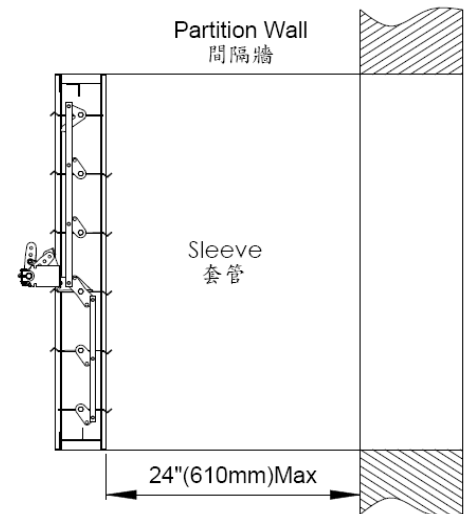
Multi-blade Fire Damper

Damper Installation

Fire Damper must install in vertically and the space between damper and the partition wall must not greater then depth.

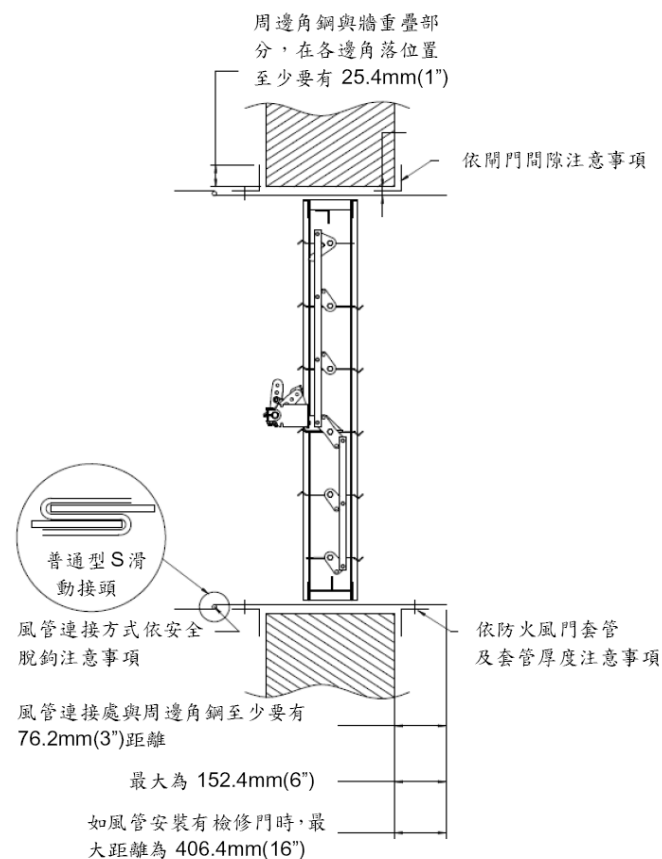
閘門安裝

防火閘門可垂直安裝。閘門於垂直安裝時，閘門與間隔牆距離應不超過24" (610mm)。



BASIC DAMPER INSTALLATION DETAILS

The purpose of installation damper properly is to ensure fire safety in the partition of the wall or floor linking space. By making use of fire dampers proper interval of air door and opening, and connect the separation device used with tuber pipe. To avoid the occurrence of system operation may impact by dampers caused the distortion and cracking, damper must be installed inside of the fire division with the brick walls, cement walls or plaster walls. The thermal sensing device must be certified by UL33.



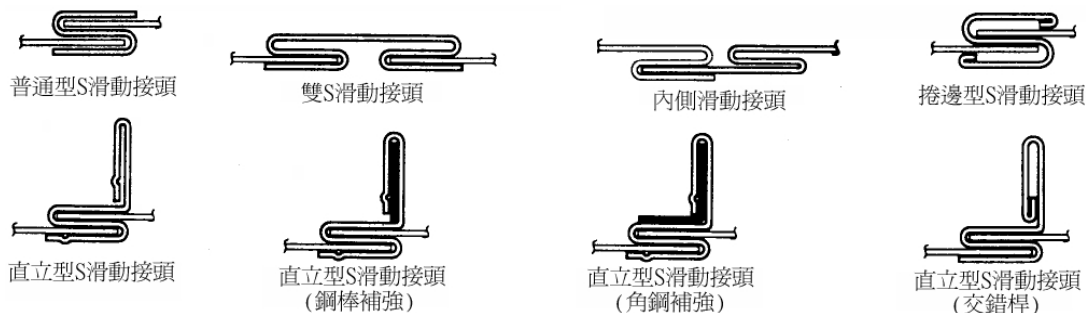
安裝及操作

閘門正確安裝的目的，是為了保證防火閘門安裝在分間牆或樓地板的開口處時，利用防火風門與開口適當的間隙，及與風管連接使用的分離裝置，避免閘門操作或發生系統遭撞擊造成閘門的扭曲及破裂。防火閘門必須要裝置在為防火區劃之磚牆、水泥牆或石膏板牆內部。熱感應裝置必須經UL 33認證通過。

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 falt 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》)。

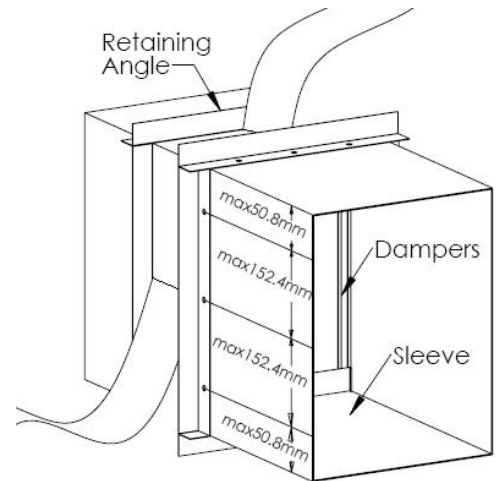


Flat drive slip 平傳滑動接頭

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。

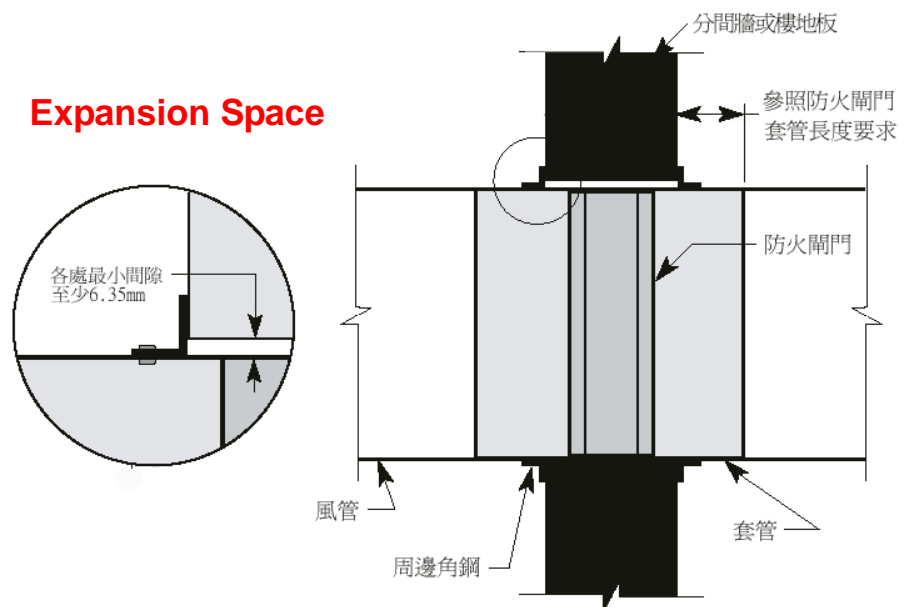
Expansion Space

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")。



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.

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。



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