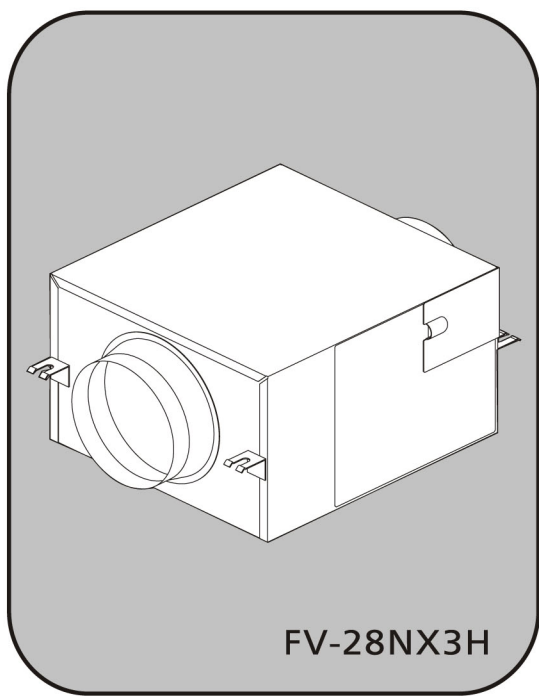


Cabinet Fan 送風機

INSTALLATION AND OPERATING INSTRUCTIONS

安裝使用說明書

Model
型號 FV-28NX3H



Contents 目錄

Supplied Accessories	2
包裝附件清單	
Symbol Instructions	2
標記說明	
Installation and Operating Safety Instructions	3~5
安裝使用安全指引	
Installation Instructions	5~8
安裝說明	
Name And Dimensions Of Components	8
部件名稱和規格	
Maintenance And Inspection	9
維修保養	
Trouble Shooting Guide	9
故障處理	
Specifications	10
規格	

Thank you very much for choosing the Panasonic cabinet fan.
Please read the instructions carefully before attempting to install, operate or service the cabinet fan.
Failure to comply with instructions could result in personal injury and / or property damage.
Please retain this booklet for future reference.

感謝您選用 Panasonic 送風機。




安裝使用和維護本送風機前, 請仔細閱讀本使用說明書。

不遵照此說明書進行操作有可能導致人員受傷和/或財產損失。

請妥善保管好此說明書以備日後參考。

The following accessories are provided with the cabinet fan in package. When you unpack, check if the accessories are all included. If not, please contact your dealer.

隨送風機產品包裝箱有以下附件，開箱後請清點是否齊全，若不齊全，請與經銷商聯繫。

Appearance 示意圖	Name and Purpose 名稱及用途	Quantity 數量
	Installation and operating instructions 安裝使用說明書	1
	Protect tube, used to protect power cord 用於保護電源線的保護套管	1
	Band, used to fix the protect tube 用於固定保護套管的索帶	1

SYMBOL INSTRUCTIONS

Please observe strictly
請務必遵守



標記說明

The following instructions should be strictly observed in order to prevent injury to the users and other persons, or damage to property.

為了防止危害或損傷到使用人和他人的人身與財產安全，對務必遵守的事項作如下說明。




- The degrees of injury or damage that can occur when the instructions are ignored and if the product is not used properly have been classified and described by the following indications.

無視說明書內容或者不正確地使用時，所引起的危害或者損傷程度，用以下標記進行分類、說明：

	WARNING 警告	Those things shown in this column indicate that there is possibility of causing death or severe injury. 有此標記的欄目，是有導致死亡或重傷可能的內容。
	CAUTION 注意	Those things shown in this column indicate that there is possibility of causing injury to the users or damage. 有此標記的欄目，是有可能導致受傷或產生物質損壞的內容。

- Types of instructions that should be observed have been classified and described by the following pictorial symbols. (An example of a pictorial symbol is given below)

本說明書對務必遵守的內容種類，用下列標記進行分類、說明：

	This symbol indicates the item "PROHIBITED" to do. 這樣的標記，指的是不可以做的-----“禁止”的內容。
	This symbol indicates the "COMPULSORY" item that must be followed without failure. 這樣的標記，指的是必須實行的-----“強制”的內容。
	This symbol indicates the item "CAUTION". 這樣的標記，指的是敬請當心-----“提示注意”的內容。

INSTALLATION AND OPERATING SAFETY INSTRUCTIONS

安裝使用安全指引



- All installation and maintenance shall be done by qualified persons.
所有安裝和保養應由專業服務人員完成。
 Unqualified construction may cause unexpected accidents.
安裝工程有不完善之處，可能出現不能預測的事故。
- Neither unauthorized inspection modification, repair nor disassembly are allowed.
禁止擅自檢查、改造、修理、拆分。
 May cause unexpected accident.
可能會產生不能預測的事故。
- When gas leakage occurs, open the window and door to make air circulate, neither turn on nor turn off the product.
當發生煤氣泄漏時，請打開門窗使室內空氣流通，禁止開啓或關閉本產品。
 May cause explosion.
可能會發生電火花引起爆炸。
- Electrical installations should be done according to the wiring diagram and local electrical wiring rules of fixed wiring.
電氣工程方面，必須按照電氣原理圖及當地的接線規程進行施工。
 Unqualified wiring may cause electric shock or fire.
接線不合格可能會引起漏電或火災。
- Beware of C.G. and weight when moving.
移動時，要注意重心及重量。
 Hang only as the unit is normally assembled, or else it may drop and cause injury.
在機體完好的情況下，才能往上吊，否則可能會引起脫落、受傷。
- The fan may rotate caused by the wind inside the duct, even power supply is switched off. Please make sure the fan has stopped actually before inspection.
即使關掉電源，因為導風管內還有風，送風機還會運轉，請確認扇葉完全停止後再進行檢查。
 May cause injury if being caught into the rotating section.
人和物等被捲進運轉部分，可能會引起受傷。
- Eyes should not be faced to the outlet opening (specially when the fan starts up).
請勿把眼睛對着出風口(特別是在起動時)。
 Any flying substance may get into the eyes.
垃圾等會飛出來，可能會弄進眼睛裏。
- Any power source other than the rated voltage and frequency can not be used.
請勿使用額定電壓及頻率以外的電源。
 May cause fire or damage the unit.
可能會引起火災或損壞本產品。
- Reconstruction of the internal wiring is prohibited.
禁止改動內部接線。
 May cause unexpected accident.
可能會產生不能預測的事故。
- Disconnect power supply before inspection.
檢查前，必須切斷電源。
 May cause injury or electric shocks.
可能會引起受傷或觸電。
- Secured upon the strengthened foundations for installation.
Be sure to take reinforcement measures if required for sufficient installation strength.
安裝本產品的建築結構必須牢固。
當不能確保安裝強度時，務必採取加固措施，以確保足夠強度。
 Improper installation may cause accident because of the falling of the product.
建築結構不牢固可能會導致產品墜落而引發意外。
- Grounding should be connected.
必須有接地裝置。
 May cause electric shocks.
當出現故障或漏電時，可能會觸電。
- The product must be connected the duct on two sides and the length of connect duct must be more than 1m.
產品兩側必須連接導風管，且導風管的長度必須大於1m。
 May cause unexpected accident.
可能會產生不能預測的事故。
- Weight of duct should not load on the unit.
導風管等的負荷重量不可落在機體上。
 May cause injury due to malfunctions or dropping.
可能產生故障或脫落，引起受傷。
- Specified number and size of the bolts should be used for hanging the unit and they must be tightened.
在天花板口懸掛機體時，螺栓要使用規定的數量和直徑，且必須擰緊。
 May cause injury due to insufficient strength.
螺栓不合格或未擰緊，可能會因產品墜下而造成人員受傷。

INSTALLATION AND OPERATING SAFETY INSTRUCTIONS

安裝使用安全指引



WARNING

警告

- Immediately stop the operation in case of any abnormality (noise, vibration, smell), and request for repair.

發生異常(聲音、振動、臭味)時應立即停止使用，進行修理。



May cause unexpected accident.

可能會產生不能預測的事故。

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

本產品不適合有殘障、智障或精神障礙的人士，或缺乏經驗、常識者(包括兒童)維護使用，除非在監護人的看護或指導下使用。

應確保兒童不要把本產品當作玩具玩。



May cause unexpected accident.

可能會產生不能預測的事故。



CAUTION

注意

- Any obstacle should not be placed near the inlet and outlet openings.

在出風口、進風口附近，禁止放置障礙物。



May cause malfunction by hitting or sucking of obstacle.

障礙物被吹起，吸進機體裏，可能會引起故障。

- The protective tools, gloves or helmet, should be worn while inspection or maintenance.

在檢查或維護時，請使用手套、安全帽等保護工具。



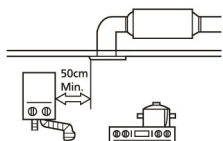
May cause injury or burn.

可能會引起受傷。

- Avoid a location with high temperatures.

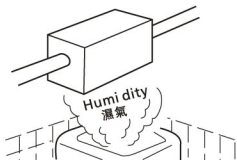
(Trouble may be caused and the motor life may be shortened.)

禁止安裝在高溫場所。(會引起故障及縮短馬達壽命)



- Do not install the fan where the humidity is high (85% or higher) such as near a swimming pool, public hot spring bathing area or outdoors.

禁止安裝在高濕度的場所(85%以上)，例如泳池、溫泉室內。



- Be careful not to drop the inspection panel or parts removed from the unit when inspection.

檢查時，要防止檢查板或其它零部件從機體上掉落。



May cause person injury.

可能會引起受傷。

- Precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances.

防止氣體或燃料燃燒器具產生的氣體回流進入房間中。

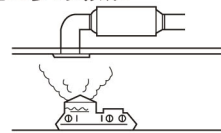


May cause back-flow of gases.

可能引起煙氣逆流。

- Avoid a location with too much oil fume.

禁止安裝在油煙過多的場所。



- During installation or maintenance, the power cord should be lower than the outlet of terminal box.

安裝及維護時，電源線的位置應低於接線盒的出口。



May cause water flow along the power cord into wiring box.

可能導致水沿電源線流入接線盒。



Horizontal line
水平線

Power cord
電源線

The angle between the power cord and horizontal line should be at 5°~30°.

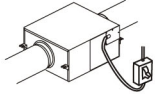
電源線與水平方向成 5°~30° 角。

INSTALLATION AND OPERATING SAFETY INSTRUCTIONS

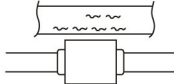
安裝使用安全指引



- Install a fan protection device like a motor overload breaker in the wiring.
在綫路中安裝一個過載保護裝置。

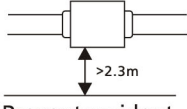


- The motor and frame should not touch any object.
馬達及框架不要接觸任何物體。



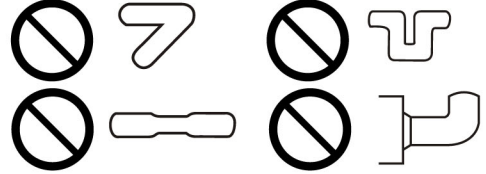
May cause vibration and noise
會產生振動及噪音

- The installation height of Cabinet Fan shall be more than 2.3m.
送風機的安裝高度，距地面必須大於2.3m。



Prevent accident 防止意外

- Connect the duct avoiding the following cases.
安裝導風管時應禁止以下情況發生。



- There should be an all poles switch with minimum 3mm contact gap in the fixed wiring.
安裝時，需在供電綫路中安裝其觸電開距不少於3mm的全極斷開裝置。

CAUTION:

- This product is not provided with power cord. When connect or change the power cord, it must be replaced by the qualified persons in order to avoid a hazard. 60227 IEC 53(RVV) (4X0.75mm²) cord should be used.
- When ventilating a room that use combustion equipment with a chimney, provide a suction port large enough. The size of the suction port should be decided by the instruction of the combustion equipment.(Exhaust gas may reverse into the room, which may cause carbon monoxide poisoning.)
- For an exhaust duct to outdoor, attach a pipe hood to the end and keep at least a 1/100 slant downward. (To prevent rain or frozen water entering.)
- Heat insulation should be taken if there is dewfall outside of the adapter and frame when indoor heating in winter.

注意：

- 本產品不提供電源綫，在連接或更換電源綫時，為避免危險，必須由專職人員處理，電源綫應該用已通過認證的4蕊60227 IEC 53 (RVV) 號綫且導綫面積為0.75mm²。
- 在使用氣體燃具的房間裏換氣時，需另外設置一個足夠大的進氣口，進氣口的大小請根據氣體燃器具使用說明書的要求來設置。(煤氣在室內逆流，可能會引起一氧化碳中毒。)
- 通往室外的管道必須保持至少1/100的向下傾斜。(防止雨水或結冰水倒流進入送風機殼體內。)
- 在冬季，在向室內供暖氣時，在接頭和機體的外表面有可能結露，必須進行隔熱處理。

INSTALLATION INSTRUCTIONS

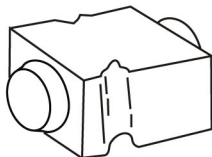
安裝說明

1. Before installation

安裝前

- Check the following. 請確認以下內容。

- Is there any breakage or deformation?
有沒有破損變形？



CAUTION:

- Check the power source of the product before installation.
- To avoid insect intrusion, please purchase a separately sold insect filter unit from the market.(The filter unit should be bought by customer and must be cleaned periodically to prevent clogging with dirt and dust .Furthermore, the filter will make pressure losing and it may reduce the air volume.)

注意：

- 確認產品的電源後進行安裝。
- 為防蟲子爬進殼體裏面，請另外購買市場上防蟲過濾網裝置。(使用過程中，要定期清洗，切勿讓灰塵把過濾網的孔眼堵塞了。另外，安裝過濾網會造成壓力損失，可能導致風量下降。)

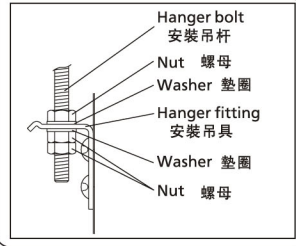
2. Installation method 安裝方法



Do not install the product as the method which is not approved in the instruction.
不得進行說明書指定安裝方法以外的安裝

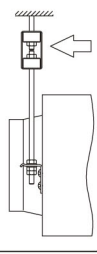
To hang the fan be sure to attach firmly with hanger bolts, washers and nuts. (Which should be M8-M10 and be supplied by the customer)

將安裝吊杆、平墊圈、螺母(客戶另購, 必須使用 M8-M10 的規格)牢固的安裝好。



Vibration cushion rubber set (supplied by the customer) can be used if in special condition for vibration requirement and it must can support the weight of the product.

如需要在特別防止振動的條件下, 請使用防震橡膠(另購), 其強度必須能夠承載本產品。



The structure of the ceiling and the suspending set for hanging the product must support more than 5 times weight of the product.

天花板結構和用於懸掛本產品的懸掛組件必須能夠承載大於本產品重量5倍的強度。

Install the exterior duct with a slightly declining slope toward outer side ($\frac{1}{100} \sim \frac{1}{50}$).

通往屋外的導風管必須保持輕微向下傾斜($\frac{1}{100} \sim \frac{1}{50}$)。

Install the main body horizontally.
機體要水平安裝。

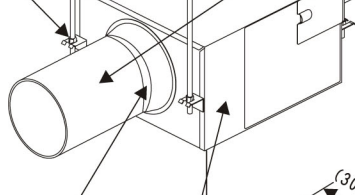
※ Please see page 8 for the value of B & D.
請在第8頁查看B和D的值。



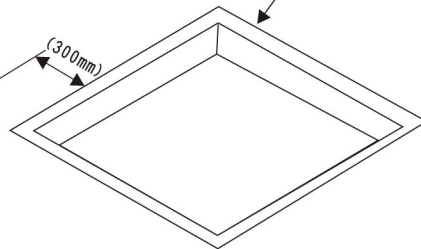
The product must be connected the duct on two sides and the length of connect duct must be more than 1m.

產品兩側必須連接導風管, 且導風管的長度必大於1m。

Air flow
風向



Be sure to provide an square inspection window of 45 cm or more.
必須設置一個45cm以上的方形檢查口。



Connect the duct to the adapter using noncombustible sailcloth.

請使用不可燃的帆布來連接導風管和接頭。

Heat insulation should be taken if there is dewfall outside of the duct and frame.

在機體和導風管的外表面有可能結露, 必須進行隔熱處理。

CAUTION:

■ To install the fan with the inspection panel facing down, remove the attached four hanger fittings and reattach them in the holes on the top and bottom surfaces (Use the screws you just removed). The former holes for installing the hanger fitting need be sealed.

■ Recommended bolt diameter is 8mm or 10mm.

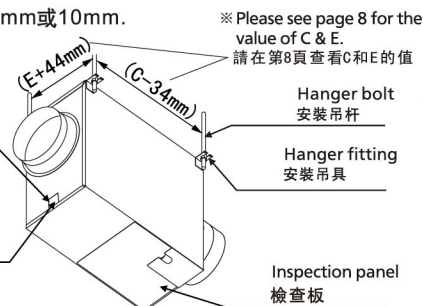
注意:

■ 若檢查板向下安裝, 安裝前請把4個安裝吊具取下, 對好頂面和底面的孔后用取下的螺釘再進行安裝。原先用于安裝的孔需要進行密封處理。

■ 推薦使用螺栓的直徑為8mm或10mm。

Aluminum tape (Supplied by the customer)
鋁箔膠帶 (顧客另購)

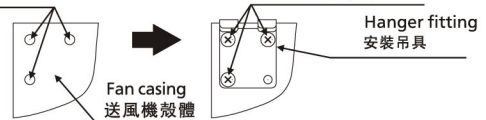
The former holes for hanger fitting should be sealed by aluminum tape or similar things.
用鋁箔膠帶或類似物品將原來用于固定安裝吊具的孔密封。



※ Please see page 8 for the value of C & E.
請在第8頁查看C和E的值

Concave holes
凹孔

Fixed with three screws by electric screw driver.
用電動螺絲刀固定三個螺釘



Hanger fitting screw positions
安裝吊具固定螺釘的位置。

Hanger fitting positions for installing with the inspection panel facing down.
檢查板向下安裝時安裝吊具的位置。

3. Wiring Connection 引綫連接

■ Subcontract an electrician for wiring.

Work in accordance with the Electrical Equipment Engineering Standard and the domestic wiring rule specified by the power company. Carry out grounding work.

Open the terminal cover and connect wires according to the following diagram.

Protective thermostat fuses are installed inside the motor. Once the fuses break after excessive temperature rise due to abnormal usage, the motor will not work.

Do not run the fan by variable-frequency drive.

■ 委托專門的電氣工程店。

接綫工程是根據電氣設備技術基準和內部接綫規程，進行安全牢固地安裝。

必須實施接地工程。

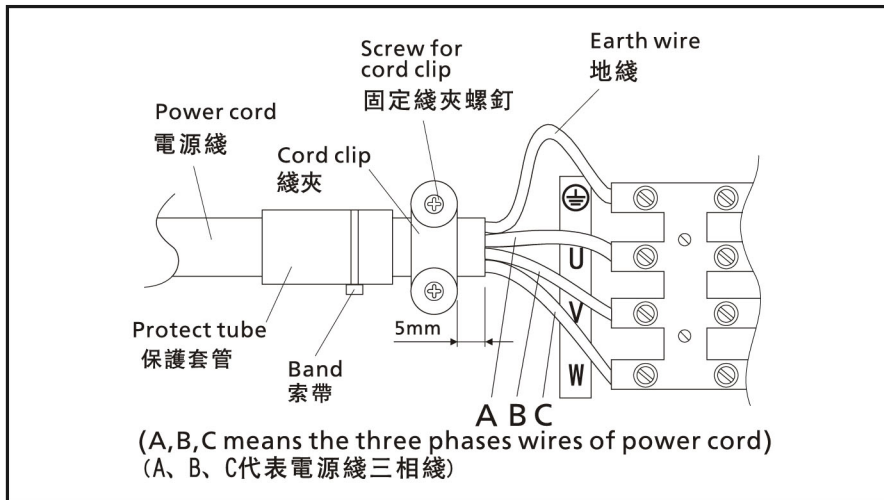
打開端子盒蓋連接。請根據下圖的接綫方法進行連接。

在本產品馬達裏面，安裝有保護馬達用的溫度保險絲，因不正常使用而使馬達繞綫溫升過高，一旦溫度保險絲斷開，馬達則起動不了。

禁止使用變頻器運行本產品。

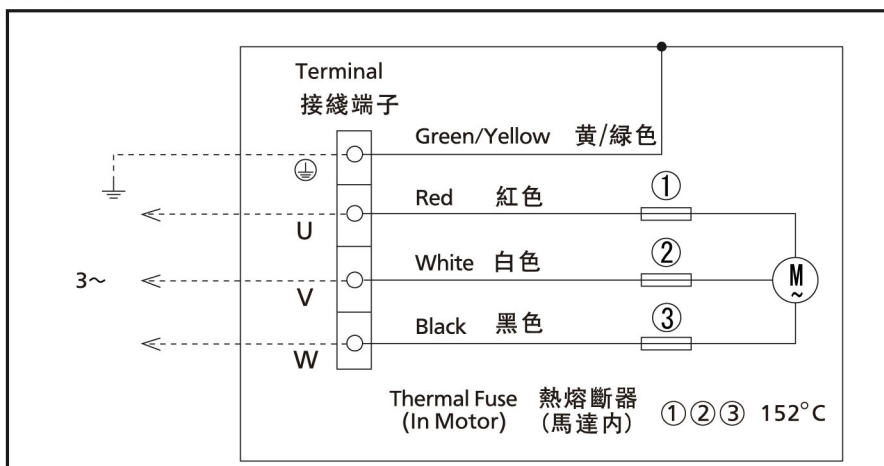
■ Method of wiring connecting

接綫方法



■ Wiring diagram

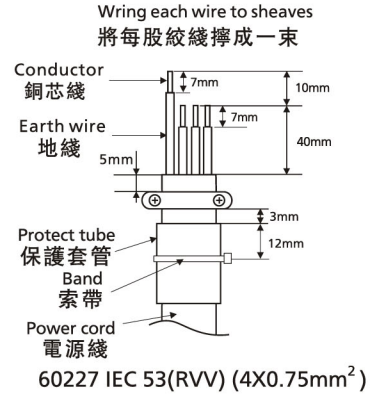
接綫示意圖



3. Wiring Connection

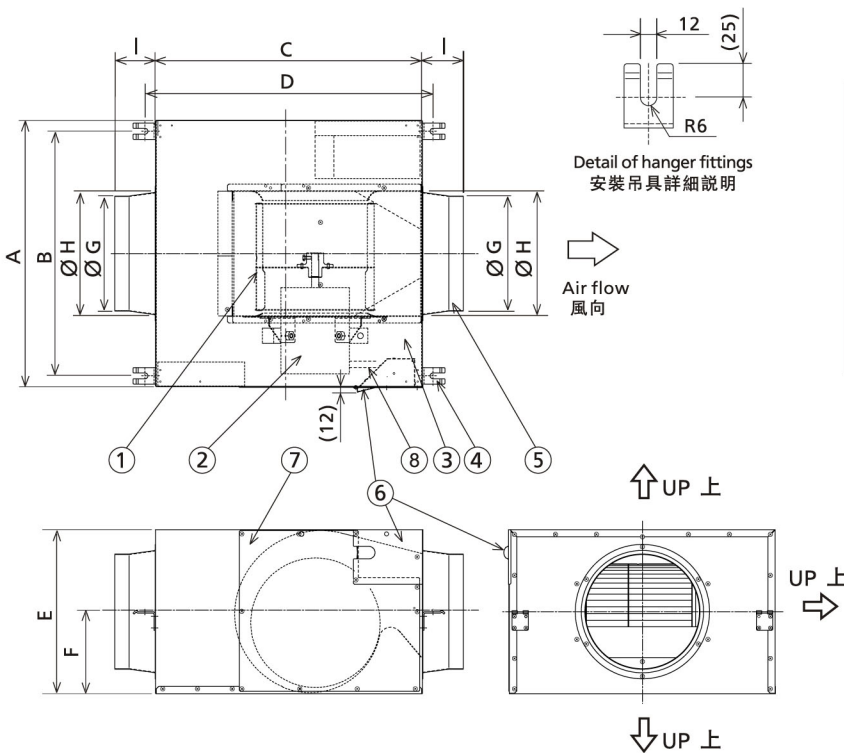
引綫連接

- The earth wire of the power cord must be longer than other wires for 10mm, and each wire inserted to the terminal need wring to sheaves. 電源綫的接地引綫必須比其它引綫長10mm，且插入端子中的每股絞綫需擰成一束。
- Add the protect tube which is provided with the product on the power cord and fix it by band. 在電源綫上增加隨機附帶的保護套管并用索帶固定。
- After connecting the wiring, install the terminal cover with screws. 接好綫后，用螺絲把端子盒蓋固定好。



NAME AND DIMENSIONS OF COMPONENTS

部件名稱和規格



No.	Part name	部品名	Q'ty
1	Impeller	扇葉	1
2	Motor	馬達	1
3	Fan casing	送風機殼體	1
4	Hanger fitting	安裝吊具	4
5	Adapter	接頭	2
6	Terminal cover	端子盒蓋	1
7	Inspection panel	檢查板	1
8	Metal conduit	金屬管	1

UP 上

The figure indicates the surfaces in the left view which can be installed upwards.
此圖示表明在左邊視圖中可以朝上安裝的產品側面。



Other installation directions are prohibited except the directions indicated in the figure.
禁止使用圖示以外的安裝方向進行安裝。

Unit 單位: mm

MODEL 型號	A	B	C	D	E	F	G	H	I	CONNECTER DUCT DIMENSION 管道尺寸
FV-28NX3H	554	510	557	601	342	171	240	255	85	Ø250

All maintenance, inspection, parts replacement and repair shall be done by service man.
所有保養、檢查、部件的更換及維修都應由專業服務人員完成。

Inspection and maintenance 檢查維護

■ For long-term and safe use of the fan, inspection and cleaning of the fan approximately once a year is required. Maintenance and inspection by a specialized subcontractor is required for prevention of accidents due to damaged parts deriving from aging and for normal performance.

部件的自然損耗可能會引起災害或性能變化，為了保證送風機的長期安全使用，必須由有資格的专业人士進行至少一年一次的檢查和維護。

■ Please pay attention that don't pull the wires during service, maintenance and cleaning.

請注意在產品的服務，維修及清潔過程中不要拉動電氣引綫。

TROUBLE SHOOTING GUIDE

故障處理

Trouble shooting 故障判斷

Check according to the following table and correct the problem. If the fan still does not work, disconnect the power source and contact the dealer.

根據下表中的指示，若有異常現象出現，必須切斷電源，與代理商聯系。

CAUSE 異常 PROBLEM 問題	Insufficient air flow 風量不足	Excessive noise 噪音過大	Excessive vibration 振動過大	Overheated motor 馬達過熱	Run abnormally 運轉異常	Action 對策
Poor foundation 安裝基礎弱		○	○			Reinforce foundation 修補基礎
Faulty installation 安裝不良		○	○			Re-adjust installation 調整安裝
Low voltage 電壓下降	○					Check power source 確認電源
Contact between rotary and stationary parts 動體與靜體相接觸		○	○	○		Inspect and adjust 檢查、調整
Sucked in objects / Adhered dust 混入異物，帶有灰塵		○	○	○		Inspect and clean 檢查、清潔
Faulty ducting 導風管不良	○	○	○			Inspect and adjust 檢查、調整
Incorrect wiring 接綫錯誤					○	Change wiring 變更接綫

MODEL 型號	RATED VOLTAGE 額定電壓 [V]	RATED FREQUENCY 額定頻率 [Hz]	RATED INPUT 額定功率 [W]	AIR VOLUME 排氣量 [m ³ /h]	NOISE LEVEL 噪音 [dB]	STATIC PRESSURE 靜壓 [Pa]	NET WEIGHT 淨重 [kg]
FV-28NX3H	3~ 380	50	640	2600	44	520	28

CAUTION:

1. The values of rated input, air volume and noise are specified at the static pressure of 0 Pa.
2. The values of noise level is A weighted average sound pressure level, the mean value are measured by our company, within +3 and -7 tolerance.
3. The values of noise level are measured at the 1.5m apart from the side of the fan body when ducts are connected on both inlet and outlet side.
It is on the assumption that the noise of fan body propagates to room inside.
4. The values of air volume are the mid-points of results measured by our company, with $\pm 10\%$ tolerance.

注意：

1. 排氣量、電氣特性、噪音值等數據是在靜壓為0Pa狀態下的數值。
2. 噪音值是A計權平均聲壓級，是本公司測試結果的中心值，有+3, -7的公差範圍。
3. 噪音值是在機體側面1.5m處測得的值(機體進風口，出風口兩側分別連接導風管)。
此測試方法是在假設機體的噪音傳到室內的情況下設定的。
4. 排氣量是本公司測試排氣量結果的中心值，有 $\pm 10\%$ 的公差範圍。

★ Insulation class B B級絕緣