VECTECH446F-Ⅱ

高壓電源供應器

High Voltage Power Supply

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我們的 VECTECH446F-Ⅱ高壓電源供應器。使用前請仔細閱讀本說明書，安全使用本產品。閱後請妥爲保管，以便日後查閱。

electrical noise and insulation might burn if the unit is damaged.

- Children do not recognize the risks of the electrical appliance. Therefore use and keep the unit out of the reach from children.

Packing articles and accessories

✧ 446F-II High voltage power supplier	1pcs
✧ Grounding cord, 2m	2pcs
✧ "O" type connection	3pcs
✧ Clamp	1pcs
✧ Instructions Manual/Maintenance bill	1pcs

Please carefully take out the unit from the carton and then check. Note any damage that might have occurred during transport. Empty the carton to ensure that small parts are not discarded. If any damage has occurred during transport, the local carrier should be notified at once. A report should be forwarded to our company or the agents nearby.

SECTION 1 General Description

The 446F-II high voltage power supply is designed and intended for use exclusively with static eliminators manufactured by our company. It is a single-phase unit with 7KV output voltage.

⚠CAUTION

A high voltage failure detection circuit is not incorporated in the power unit. High voltage output is not interrupted even if an abnormal condition, such as short-circuit or sparking caused by the insulation degradation of the ionizing electrodes or the high voltage cable, exists. If it persists (abnormal condition), insulation might burn out. Regular inspection and maintenance is essential for efficient and trouble-free operation.

SECTION 2 Specifications

Ambient conditions:	About 0~50℃,10%～90%RH
Power voltage:	220VAC 50Hz/60Hz
Secondary Output voltage:	$7KV^{0}_{-40\%}$
Secondary short current	＜4.5mA
Rating power:	＜30W
Maximum load:	2

SECTION 3 Installations

Check the voltage on the nameplate before use and input (primary) voltage of the high voltage power supply is preset in the company. Make sure that the input voltage corresponds to the preset voltage on the nameplate.

⚠CAUTION:

- **All the installation must be carried out by a trained electrician.**
- **Complete all wirings before switching on the power switch.**
- **Do not drill any hole on the power supply unit.**
- **The unit should not be operated in an ambient containing corrosive, combustible gases, solvents, water, high dust or high humidity place.**
- **In case it is attached to a vertical wall or frame, the high voltage connector should be underside.**

3.1 Setting Location

This unit cannot be installed in hazardous environment. It should be located near electrostatic eliminators. It can be fixed on the wall, floor or

machine frame by four holes in the base's legs of the unit.

3.2 Grounding

Connect the grounding cord (with yellow and green) to the ground or grounding terminal of unit. The other head has been connected to the nozzle. Make the nozzle and the unit both are grounding. Confirm the connection and then make a test about the grounding resistant which should be <4Ω.

3.3 Connection of High Voltage Cable

The high voltage cable from the ionizing static eliminator must be connected with the connector provided by our company. The other types cannot be used. After wiring (high voltage cable) and grounding connections have been completed, the connector of the high voltage cable can be connected to the high voltage power unit output terminal and finger tightened. Please do not use any tools.

⚠ **CAUTION:**

Please refer to instruction manual of the ionizing static eliminator about the connection method of high voltage cable.

3.4 Connection about the power cord

This cord must be connected to the power supply with correct voltage. The use conditions are listed on the nameplate affixed to the power unit. The power socket must be the three terminals socket with good grounding.

Do not connection to the alternating current power supply (power input) before all groundings and high voltage connections have been completed.

SECTION 4 Operation

1. The power unit has a power switch and an indicating lamp. ON position is marked on the left side of the switch. When the switch is in ON position, the indicating lamp is turned on and high voltage appears at the output.
2. The emitting electrodes in neutralizers are connected to the output of the Power unit by a high voltage cable.
3. Turn off the power switch and the indicating lamp goes out and without high voltage output.

⚠ **CAUTION:**

When the unit is turned on and off periodically, the interval about the on and off time should be at least one minute in a cycle. If a cycle is shorter than this, the life of the unit may be adversely affected.

SECTION 5 Inspection/Maintenance

⚠**CAUTION:**

The inspection of the unit should be carried out by a qualified technician.

5.1 Grounding

Measure the resistance between the unit's grounding pole and the grounding terminal of the three terminals socket. The grounding resistant should be less than 4Ω.

5.2 Electrostatic eliminator performance test

1 Neutralizing performance should be checked periodically with a neutralizer connected to the power supply unit according to the following steps.

2 Recommend using a charge plate monitor (for instance CPM374) to check the ion balance, according to the Ionization Standard ANSI/ESD-STM3.1-2000 of the ESD Association.

3 If there is only a charge plate monitor held by hands, check the neutralizing performance periodically according to the following steps.

a) Measure the voltage of a charged object with an electrostatic measuring device held by hand.

b) Connect to an appropriate electrostatic eliminator and use it to neutralize the charged object. Remove the electrostatic eliminator to the charged object about 15~30cm and keep about several seconds.

c) Measure the voltage of the charged object again. If the voltage is up to grade (in acceptable limit), it means the electrostatic eliminator services well.

⚠ **CAUTION:**

Check that neutralization efficiency decreases when the charged object is moving away from the neutralizer.

5.3 Output voltage

Check the high voltage output of the unit periodically (at least once a year) as the following procedure:

1) Connect a high impedance high voltage voltmeter to the output of the Power unit. The ground terminal of the meter must be connected to ground.
2) Switch on the high voltage switch, the measured voltage should be among the 0~-40% of the rated value.

SECTION 6 Trouble shooting

Trouble	Probable cause	Countermeasure
Low effect static eliminating or often sparking.	The static charge eliminator might be cleaned.	Switch off the power supply. The eliminator should be cleaned with a soft cloth or a soft nylon brush. Do not use any solvent or metallic brush. Regular cleaning will maintain a high performance level for the static eliminator.

It cannot neutralize the electrostatic and failure in spark test (no spark).	The power supply has not been switched on.	Switch on the power supply switch.
	High voltage cable land/or static neutralizer may need cleaning or may be damaged.	Turn the Power unit off. Clean the ionizing emitters and the insulation. If it does not work now with Power unit on, then the high voltage cable or static neutralizers may need repair or replacement.
	The Power supply unit may be damaged.	Remove the high voltage cable from the Power supply unit and test it separately for output voltage. If there is not output, a repair or replacement may be necessary. Contact us or out agent with the serial number of the Power supply unit and a description of the problem.

SECTION 7 Replaceable parts

There is no replaceable part with the units (except for common electrical such as fuse, lamp switch etc.)

VECTECH

Factory calibration certificate

Model : VECTECH446F-II+VECTECH445F

Serial No. of high voltage power supply: M446F-II1204A01

Serial No. of ionizing air gun: VECTECH445F120401

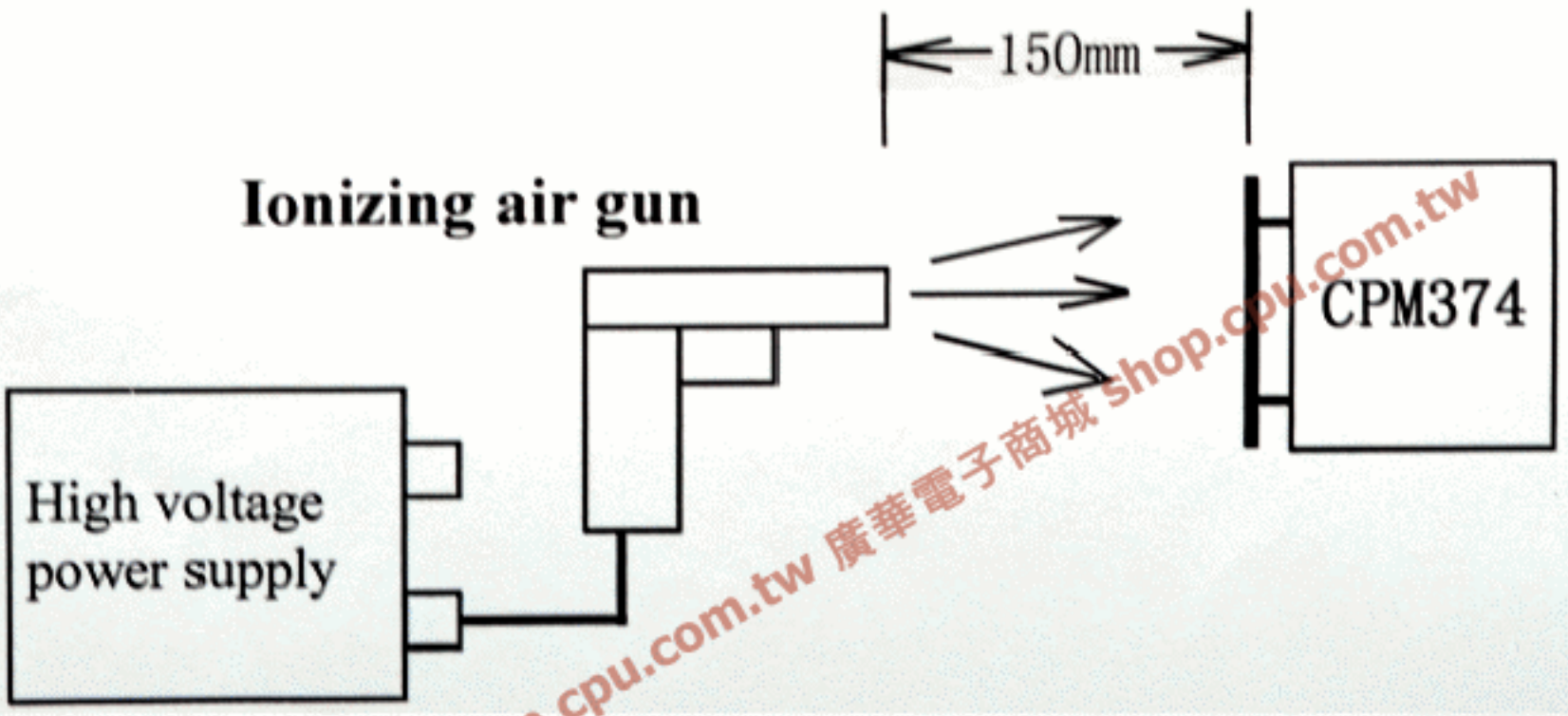
Date of Calibration : 04/24/2012

Test condition : Temperature : 22 ℃ Humidity : 60 RH%

Test equipment : the charge plate monitor CPM374

Decay time and Offset voltage : (Testing under air pressure of 0.6MPa)

Start and stop voltage		1000V～100V	-1000V～-100V
Decay time		1.0 S	1.1 S
Offset voltage	Range	±50V	
	Test value	+2V	



Testing was performed with a charged plate monitor in accordance with Ionization Standard ANSI/ESD STM3.1-2000 of the ESD Association.

Test operator : Jacken

Total Judgement : PASS

VECTECH446F-II 使用須知

⚠警告:

本產品不能安裝在危險的環境中，在有可燃性、腐蝕性、爆炸性材料或氣體之下，不能使用本品。

⚠注意:

- 本產品提供高壓，爲了避免觸電，請遵守操作手冊的操作規程。
- 本產品在靜電排除過程中使用，務必遠離水、油、溶劑及其它的導電性雜質。暴露在這樣的物質中將導致本品的絕緣系統失效。
- 本產品不能在有酸城的腐蝕性煙霧或像氯氣的腐蝕性氣體情況下使用。
- 本產品所使用的輸入電壓必須是高壓電源供應器商品標牌上的額定電壓。
- 本產品必須有良好的接地，否則可能遭受電擊和其他事故。
- 在和電源連接時，請不要在任何電荷中和電器上做絕緣測試。
- 根據本說明書中闡述的步驟定期進行仔細的保養。
- 如果在檢驗中，出現了任何不正常的現象，應該根據要求修理或更換本產品，根據保修條款，我們將提供相應的檢查，更換或修理服務。
- 如果失手落在地上，本產品有可能被損壞。出現這種情況時，應由指定的技術人員進行檢查和修理，在被損壞的情況下，本電源會產生相當大的電流聲，而且絕緣部份可能被燃壞。

一、概 述

本電源是專門爲本公司的 VECTECH445F-II 離子風槍設計並與之配套使用的單相電源，可以同時連接兩個 445F 離子風槍。

⚠注意:本電源供應器沒有安裝高壓斷電檢測電路，即使出現異常情況（如短路，電離極或高壓電線絕緣老化引起的電火花等）高壓輸出也不會中斷。如果出現異常情況，絕緣性能將會完全燒壞。爲了保證高效無故障的運行，必須經常檢測和保養。

二、技術參數

1、基本特性

環境條件：約 0～50℃， 10%～90%RH

2、規格

型號	VECTECH446F-II
電源電壓	110V/230VAC 60Hz
輸出高壓	$7KVAC^{0}_{-40\%}$
次級短路電流	≤4.5mA
額定功率	＜30W
負載數	2

三、裝箱物品

產品部件	數量
VECTECH446F-Ⅱ高壓電源供應器	1 台
接地線	2 根
O 型端子	3 個
鱷魚夾	1 個
使用說明書	1 份

* 請小心把電源從紙箱中取出檢查。注意是否在裝運過程中被損壞，並確認紙箱內無細小部件被忽視。如果裝運中有任何損壞，應立即通知當地承運公司，然後提交一份報告給本公司或就近代理商。

四、安 裝

⚠注意：

- 所有安裝都必須由經專門訓練的電工來完成。
- 完成所有的接線工作後再打開電源開關。
- 不要在電源機身上鑽孔。
- 電源不能在含有腐蝕性的易燃性氣體溶劑、水、灰塵和濕度高的環境下使用。
- 把電源裝在一個垂直的牆面或機身上時，高壓接頭必須朝下側。

使用之前請檢查標牌上的額定工作電壓，高壓供應器的輸入電壓在出廠前已經預設好。確認輸入電壓和標牌上的電壓值是否一致！

1、安裝位置

電源必須放置在靜電消除器附近，通過電源底座支腳上的四個螺絲孔，可將電源安裝在牆壁，地板或機身上。

2、接地

用所提供的地線（黃綠色）連接電源地線埠和機身或大地，使得電源供應器具有必要的接地。確認連接無誤，經測試，對地電阻應該＜4Ω。

3、高壓線的連接

⚠注意：要瞭解高壓線的接線方法，請參照離子吹塵槍的使用說明。

靜電消除器上的高壓線應接在本廠配置的接頭上，不能使用其他型號的接頭。VECTECH446F-Ⅱ電源供應器在接線（高壓線）和接地完成之後，再把高壓線的高壓接頭接到電源供應器的高壓輸出端，並用手指擰緊其旋鈕。請不要使用任何工具。

4、接通電源線

⚠注意：在所有接地和高壓接線完成之前，不要連接電源的輸入電壓線。

這條線應該接在正確電壓的電源上，附在電源上的商品標牌上標明瞭這些使用條件。所用電源插座應是具有良好接地的三端電源座。

五、操作

1. 該款電源供應器上有一個帶指示燈的電源開關。“ＯＮ”（開）的位置在開關的左側，當開關打開時，指示燈亮，輸出端產生高壓。
2. 靜電消除儀的發射極通過一根高壓線連接在電源的輸出極上。
3. 關掉電源開關，指示燈滅，高壓輸出被停止。

⚠注意：

當電源被間歇性地開關時，在一個迴圈中，開和關的時間至少應該在一分鐘以上。如果開和關的迴圈時間低於一分鐘，電源的使用壽命將受到負面影響。

六、維護和保養

⚠注意：該產品的檢測應由合格的技術人員來進行。

1、接地情況

測試離子風咀外殼，機身及電源地線埠之間的對地電阻，讀數應該是小於 4 Ω.

2、靜電消除性能

應該按下列步驟把風槍和電源連接起來，定期檢測靜電消除性能。

a）使用靜電測試儀測量一個帶電物體的電壓。

b）把電源接到離子風槍上，把這個帶電物體的靜電消除。

c）重新測量帶電物體的電壓。

如果靜電消除已完成（在合格的範圍內），那麼該電源是好的。

注：檢驗一下，當把風咀從帶電物體上移開時，靜電消除功能會逐漸降低。

3、輸出電壓

遵循下列步驟定期（至少一年一次）檢查電源的高壓輸出情況。

A）把一高阻抗高電壓表接在電源的輸出端，電壓表的地線埠必須接到地面。

B）打開高壓開關，測出的電壓應在規定的額定值範圍之內。

七、消除故障

故障	原因	解決方法
消除電荷效率低或消除器經常冒火花	正常的操作，應該看不到電火花。離子風咀也許需要清潔了。	關閉電源，用一塊軟布或軟尼龍刷把風咀清理乾淨。不要使用任何溶劑或金屬刷，定期清潔能使風咀保持高性能水平。
無法消除靜電，電火花測試失敗。(無電火花出現)	供電電源沒有打開	打開供電開關
	高壓線及／或離子風咀需要清潔或已被損壞。	關閉電源，清潔電離發射極和絕緣層，如果打開電源還是不行，則是高壓線或風咀需要修理或更換。
	電源可能已損壞	從電源上把高壓線取下來，單獨對它進行輸出電壓測試，如果沒有電壓輸出，有必要進行修理或更換，提供電源的編號並說明出現的問題。

八、更換零部件

電源通常沒有什麼可更換零部件（除了普通的電氣元件，如保險絲、燈開關等）。

446F-II High Voltage Power Supply

Instruction manual

Thank you for purchasing this high voltage power supply. For your safety, please read this Operating instruction carefully before operating. And always keep this manual readily accessible for reference.

⚠ WARNING

This unit is not constructed in hazardous environment. It cannot be used where it will be exposed to ignitable or corrosive material and gases.

⚠ CAUTION

- This unit provides high voltage. Please follow the operation instructions carefully in order to minimize electrical shock hazard.
- This unit is intended for use in electrostatic processes that are free from water, oil, solvents and other conductive contaminants. Exposure to such contaminants will cause failure of the electrical insulation system in the product.
- The primary side of this unit must be connected to the correct line voltage as indicated on the nameplate. The applied input voltage should be within permitted range mentioned in the section 2 (Specifications).
- The unit must have proper grounding. If without proper grounding system, it maybe has electrical shock hazard.
- Do not perform insulation test on any charge neutralizer when connected to these power units.
- Carry out careful maintenance periodically according to the procedure given in the instruction manual.
- If any abnormality is observed during inspection, the unit must be repaired or replaced as required. Inspection, exchange and repair service will be provided in accordance with the warranty conditions.
- This unit is likely to be damaged if dropped. In such an event, it should be carefully examined and any necessary repairs be made by an authorized technician. The unit will produce considerable