



"The OHD Quantifit  
implemented the OHD Quantifit  
for NFPA compliant SCBA  
fit testing. The OHD Quantifit  
has increased our speed,  
accuracy, and ability to  
manage reports using OHD's  
FitTrack Gold software."

Chief Robert  
Chicago Fire Department

## OHD QUANTIFIT

### 原理、操作與維護

Presented by: Tony Wu  
2016/8/21



Cheng Yi Industrial Safety & Health Co., Ltd.  
Kang Hwa Safety Supply Company



## OHD Quantifit

# QUANTIFIT



CNP & CNP REDON –  
把面罩內部形成負壓狀態，偵測面罩洩漏量來  
判定密合度



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# OHD Quantifit 設計理念



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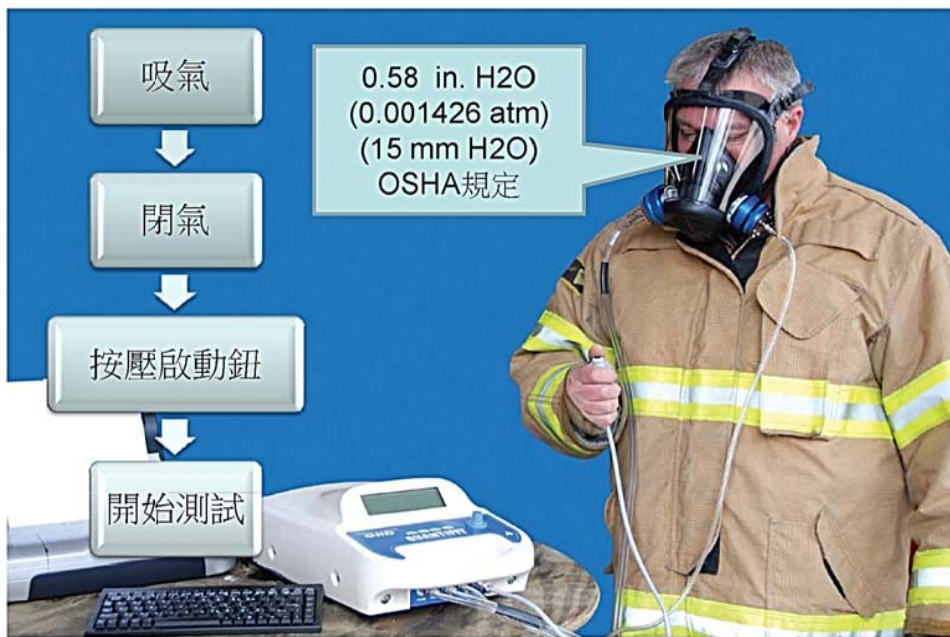


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# OHD Quantifit 偵測原理



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# OHD Quantifit 偵測原理

抽出氣體總量→測得洩漏率(cc/min)

$$\text{密合係數 (Fit Factor)} = \frac{\text{額定呼吸率 (Modeled Breathing Rate)}}{\text{測得洩漏率 (Measured Leak Rate)}}$$

※ OSHA規定額定呼吸率為53.8 l/min

$$\text{Over all Fit Factor} = \frac{N}{[1/FF_1 + 1/FF_2 + \dots + 1/FF_N]}$$



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# OHD Quantifit 操作方法

- 開機連結
- 執行每日校正(約1分鐘)
- 測試準備(連結面罩→人員穿戴)
- 進行測試(5個動作，每個動作測試8秒鐘)



步驟一：臉部向前探站姿並正常呼吸。之後使臉部向前閉氣測量。



步驟二：彎腰下體，如同要碰到腳趾一般。之後使臉部與地面平行閉氣測量。



步驟三：甩頭將頭部用力的多次前後擺動，並大聲地喊叫，或在呼吸防護具內用力呼氣。三秒後，停止動作並使臉部向前，開始閉氣測量。



步驟四：重新配戴 1 將呼吸防護具取下，鬆開所有的面部固定帶，然後重新配戴呼吸防護具。之後使臉部向前閉氣測量。



步驟五：重新配戴 2 將呼吸防護具取下，鬆開所有的面部固定帶，然後重新配戴呼吸防護具。之後使臉部向前閉氣測量。

一個流程3-5分鐘



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# THE REDON PROTOCOL

with the OHD Quantifit Controlled Negative Pressure (CNP) technology



**STEP 1 - FACE FORWARD**  
Stand and breathe normally. Face forward while holding breath for measurement.

**STEP 2 - BEND OVER**  
Bend at waist, as if going to touch toes. Face parallel to the floor, while holding breath for measurement.

**STEP 3 - SHAKE HEAD**  
For about 3 seconds, shake head back and forth vigorously several times while shouting or blowing out hard into respirator. Stop and face forward while holding breath for measurement.



**STEP 4 - RE-DON 1**  
Remove the respirator mask, loosen all facepiece straps, and then re-don the respirator mask. Face forward while holding breath for measurement.



**STEP 5 - RE-DON 2**  
Remove the respirator mask, loosen all facepiece straps, and then re-don the respirator mask. Face forward while holding breath for measurement.

**Here's how the Quantifit works**  
During a fit test, the respirator filters are capped with test adapters, and the exhalation valves are removed from the mask. With the test subject holding his or her breath for no more than ten seconds, the Quantifit then establishes and maintains a slight vacuum, or controlled negative pressure, inside the mask. Since the respirator filters are sealed, all sources of leakage into the mask are through the face-to-facepiece seal. The volume of air drawn out of the mask by the Quantifit during this short period of time is equal to the leak rate into the mask through the face-to-facepiece seal.

The Redon Protocol applies to both half-mask and full face masks.



# QUNATIFIT 測試流程

- 步驟一 面向前正常呼吸  
↓測試
- 步驟二 彎腰與地面平行  
↓測試
- 步驟三 左右擺頭3秒鐘  
↓測試
- 步驟四 重新穿戴  
↓測試
- 步驟五 重新穿戴  
↓測試
- 測試結束

(測試時摒住呼吸8秒)



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# OHD Quantifit 測試模式

- Redon Protocol (一般流程)
- MIL Protocol (軍規流程)
- SCBA Protocol (SCBA流程)
- CBRN Protocol (CBRN流程)
- CSA Protocol (加拿大標準流程)
- Custom 1 & Custom 2 (自訂流程1&2)



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# OHD Quantifit 面罩轉接頭



可檢測廠牌：

3M, AO Safety, Avon Protection, Bullard/Sabre, Bacou/Dalloz/Willson, Draeger, Fenzy, Glendale/Bilson, ISI, Interspiro, Kemira, Lab Safety, Life Air, MSA, Moldex, North, Protech, RSI, Scott, Sundstrom, Sperian (Survivair), US Safety, US Military .....



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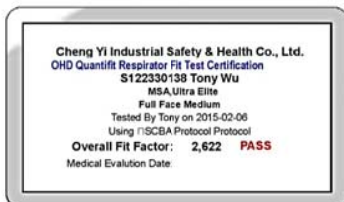
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# 測試報告

■ 密合測試結果報告

■ 密合測試卡



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Cheng Yi Industrial Safety & Health Co., Ltd. Fit Test Result Report Test Date: 02-06-2015 3:22:50

**Tony Wu**  
S122330128

Department:  
Med Eval:  
Job Code:

Mask: **MSA Ultra Elite Medium Full Face**

Challenge Pressure: **1.50**

Protocol: **□**

Last NIST Calibration: **12-12-14**

Respiratory Rate: **93.10**

Minimum Passing Fit Factor: **900**

Last Daily Calibration: **02-06-15**

Other:

Serial No: **3762**

Notes:

Step Number	Fit Factor	Leak Rate
1 Face forward	3243	29
2 Bend over	4433	21
3 Shake head	3348	29
4 Re-don 1	1536	61
5 Re-don 2	2362	39
<b>Test Result:</b>	<b>2622</b>	<b>36</b>

**PASS**

Tony

Tony Wu



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## OHD Quantifit 維護保養

- 測試前每日校正
- 年度回廠保養及校正



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Thanks For Your Attention!  
Q & A



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