第四代(2012 年) N650A

高精度垂直度測量儀使用指南

Instruction of High Precision Squar-master Measuring Device

鑫禾興業有限公司

Golden-Hope Ent., Co., Ltd.

2012 年 02 月

目 錄

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一、概述

Summary

新開發高精度垂直度測量儀新開發第四代是　鑫禾興業有限公司,近年開發的最具有先進水平的垂直度檢測儀器,除改善耗氣量,更具有測量精度極高、速度快、直接讀取、移動輕、結構嚴謹、簡單等特點。

New development NO.4 high Precision Squarmaster Measuring Device is a newest developing instrument for the advanced squaremaster measuring by Golden-Hope Ent., Co., Ltd. Significant improvement of the air consumption The following features： high accuracy, fast, intuitive readings, moving light, well-structured and easy

其功能特點 Function：

☆ 可實現高精度垂直度的測量；

Specifically for realize the high precision measurement of squareness。

☆ 裝置 TAIWAN PAT. M373482 專利自校支桿座,可做 180 度自我校正方向旋轉、可夾持槓桿千分表、數顯表、電感測頭等；

The equipment Taiwan has a PAT M373482 (The fix-place for inspecting the absolute squareness measurement) , can rotate 180 degrees, can be used to hold lever dial indicator, digit display meter, inductance probe and so on。

☆ 底部裝置 TAIWAN　PAT. M394454 專利可微調自動彈壓定位空氣軸承座，可在平台上隨意移動，可以微調 X.Y 軸偏差去歸正 Z 軸軸向。

The base bottom air bearing of the device TAIWAN PAT. M394454

The fixture is automatic elastic press locating of plane with hree-point for high accuracy square-master base of Z axis axial adjusting. Can move freely in granite surface plates。

is with air slide bearing inside. It can be linear movement on surface plate easily.

☆ 採用新環保概念，配裝手搖轉輪，不配裝驅動結構供電電池。

Use new concept of environmental protection. equipped with hand wheel, Do not install battery-driven power structure。

☆ 採用 4 面加工高精度花崗岩主柱為軸身，密封滑座配裝特殊可調整正負壓氣浮機構，精度高、可靠性佳；

Column axis using the main body of granite, four high-precision machining face, Sealing slide with special special adjustable positive and negative pressure air bearing of high precision, good reliability .

☆ 操作簡單；

It is an easy measuring by remote control operation.

二、主要技術指標

Technology Specification

型號 Type	N650A
測量範圍 Measuring Range	600mm
測量面與基面直線度 Straightness between measuring plane and datum plane	<1.5μm
測量面與基面垂直度 Squareness between measuring plane and datum plane	可微調歸正 Can be Reformed
側面與基面垂直度 Squareness between side surface and datum plane	可微調歸正 Can be Reformed
本體高度 Body Height	920mm
重量 Weight	72kg

註：上述標稱精度要求環境

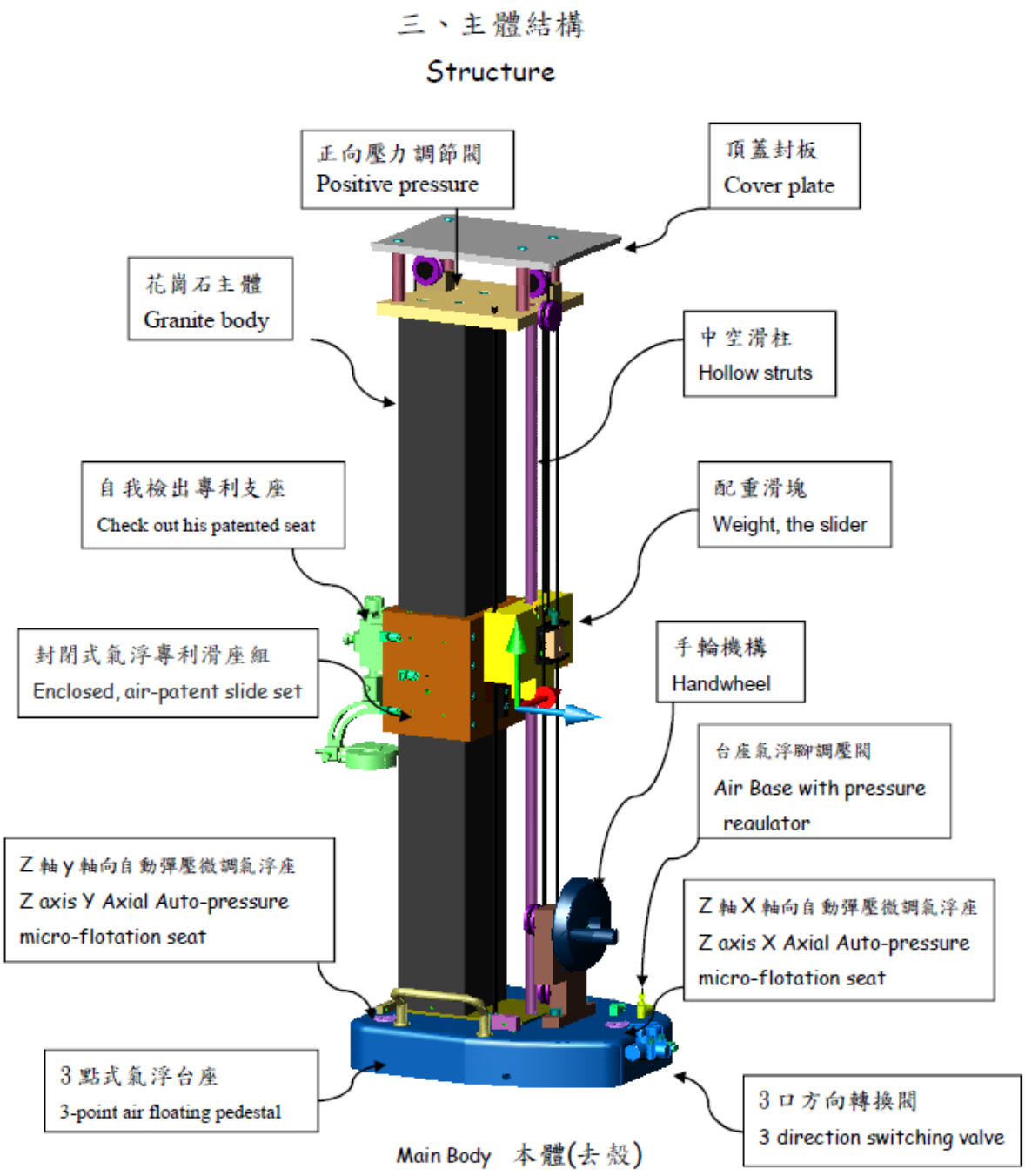
Remark： The required environment

1. 溫度 *Temperature*：20±1℃
2. 濕度 Humidity：50%
3. 使用空氣壓力 using air pressure： 2kg/cm^2
4. 基準平板：建議外形尺寸不小於 2000×1000×300mm
   平面度 3-5μm 以內

   Surface Plate： The suggested dimension should be 2000×1000×300mm at least. And the flatness is under 3-5μm.

三、主體結構

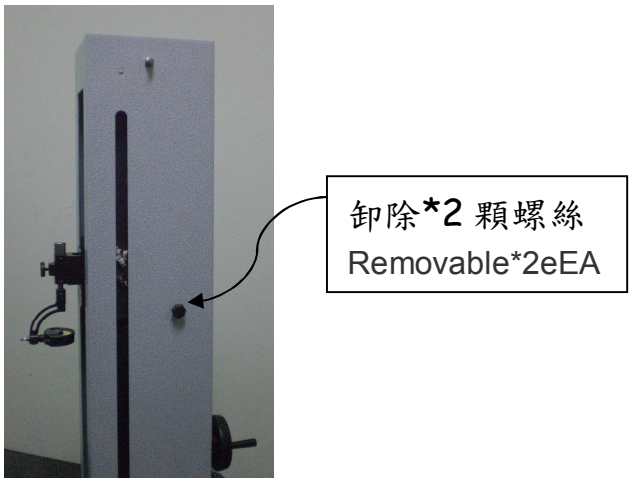
Structure



Main Body 本體(去殼)

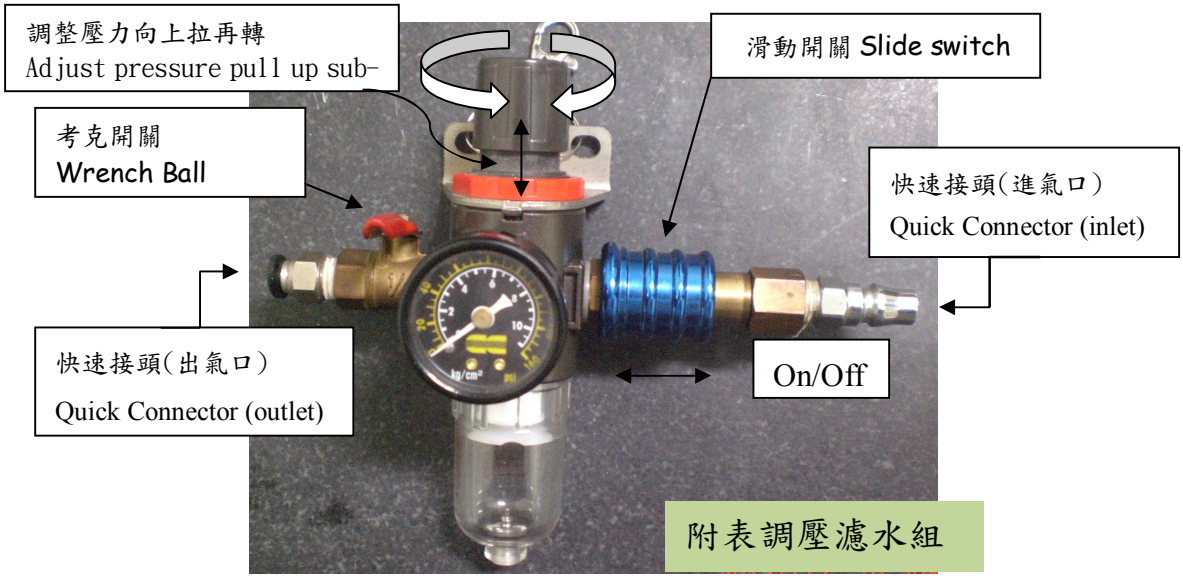
四、使用方法
Using Method

1. 拆箱準備
Open the box ready



1-1. 新品拆箱，取出本體放置平台上，先卸除*2 顆滑動配重運輸保護固定螺絲。
New unpacking, remove the body, placed on the platform, two sliding weight, shipping protection screw dismount

2.取出標準配件附表調壓濾水組，連接空壓機氣源與垂直儀。
Remove the standard accessories, Schedule regulator treatment group connected with the SQUAREMASTER instrument and air compressor



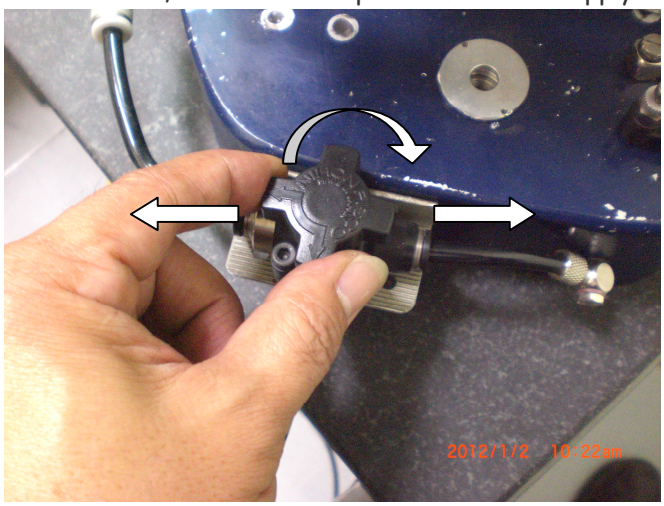
2-1. 調整壓力先往上拉再旋至定壓 2kg/cm^2 壓力需求。
Adjust pressure to spin around before pulling up demand 2kg/cm2。

2-2.開啟氣源，將調壓閥壓力調至 2kg/cm^2，連接進氣將 6mm 氣管插入 3 口方向閥進氣口，扳動球閥開關，開啟供氣。

Open air, the pressure regulator adjusted to 2kg/cm2, Connecting the inlet, the 6mm tube inserted in the outlet valveswitch on the rear

3.旋轉 3 口方向閥，選擇使用部位供氣。

Rotation direction valve, choose to use parts of the air supply

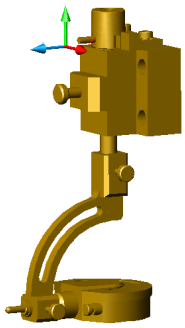


4.先逆時鐘旋轉到位，開啟底座供氣，將垂直儀安置就位後，再轉換為測量供氣使用。

To turn on the switch of air cushion. And set up the position of this instrument.

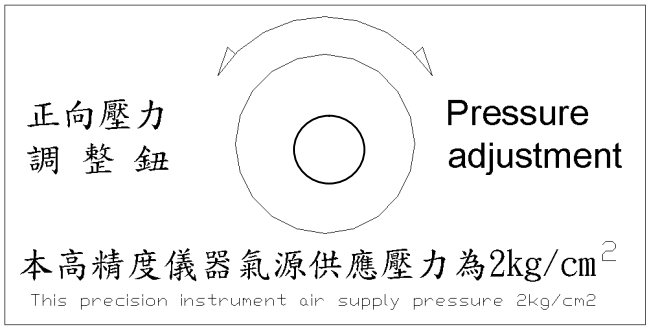
5.安裝量表在弓型支架，調整量表位置並鎖緊。

To fit the direction meter. And adjust the holding with a best position and locking.



6.調整最佳精度正負壓(正負壓在控制氣浮移動時精度器差值，可依個人需求做合適調整)

adjust the best accuracy is negative. Positive and negative pressure in the control accuracy of air-moving device difference, make the appropriate adjustments according to personal needs



調整方法 Adjustment method:：

6-1. 轉動手輪先檢查封閉式氣浮滑座是否在閉鎖不動狀態?

Handwheel check enclosed space Slide is in the air will not move off the state?

6-1-1.不供氣狀態

State does not supply air pressure：

*轉不動為閉鎖狀態：表示移動器差控制是零。

*Not turn that lock state : Location of the action that the controller is zero difference

6-1-2.供氣狀態：(可依下列工作需求情況調整它)

A supply air pressure state(Adjusted according to the following conditions)

*轉動時手感很緊狀態：表示移動器差控制接近零。

*Turn the hand wheel, it can move, must feel very tight.

Turning movements on behalf of poor control device close to zero

*轉動時手感不緊狀態：表示移動器差控制在最佳狀態。

*Turn the hand wheel, it can moving, never feel tight.

Turning movements on behalf of poor control device in the best condition

*轉動時手感鬆鬆狀態：表示移動器差控制在最大狀態。

* Turn the hand wheel, it can move very easily feel absolutely.

Turning movements on behalf of poor control device at the maximum state

正向壓力供氣越大移動阻力越小但器差越大，正向壓力供氣越小移動阻力越大但器差越小，可依使用需求調整之。

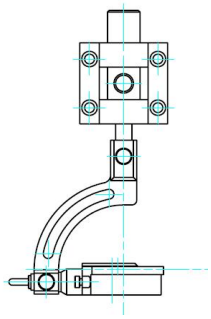
The more positive air pressure supply, sliding resistance will

be smaller, but the greater the tolerance value.

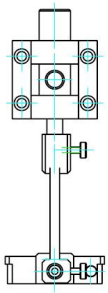
The less positive air pressure supply, the larger the sliding resistance, but the smaller the tolerance value.

Adjusted according to user needs.

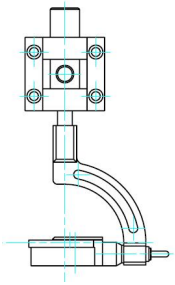
7. 從自校支桿座量表認識方位 Understanding of the direction:



左側檢出
Left measuring test



前方檢出
Front measuring test



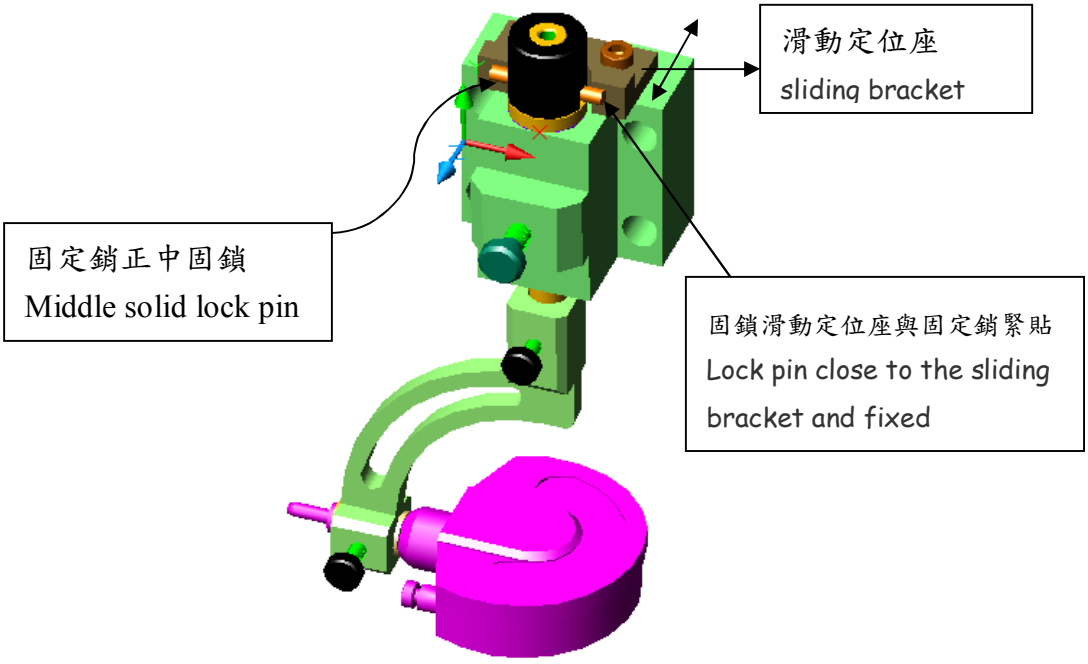
右側檢出
Right measuring test

8. 自我檢出自校支桿座定位

Own test method to find Stent positioning method ：Program 1.

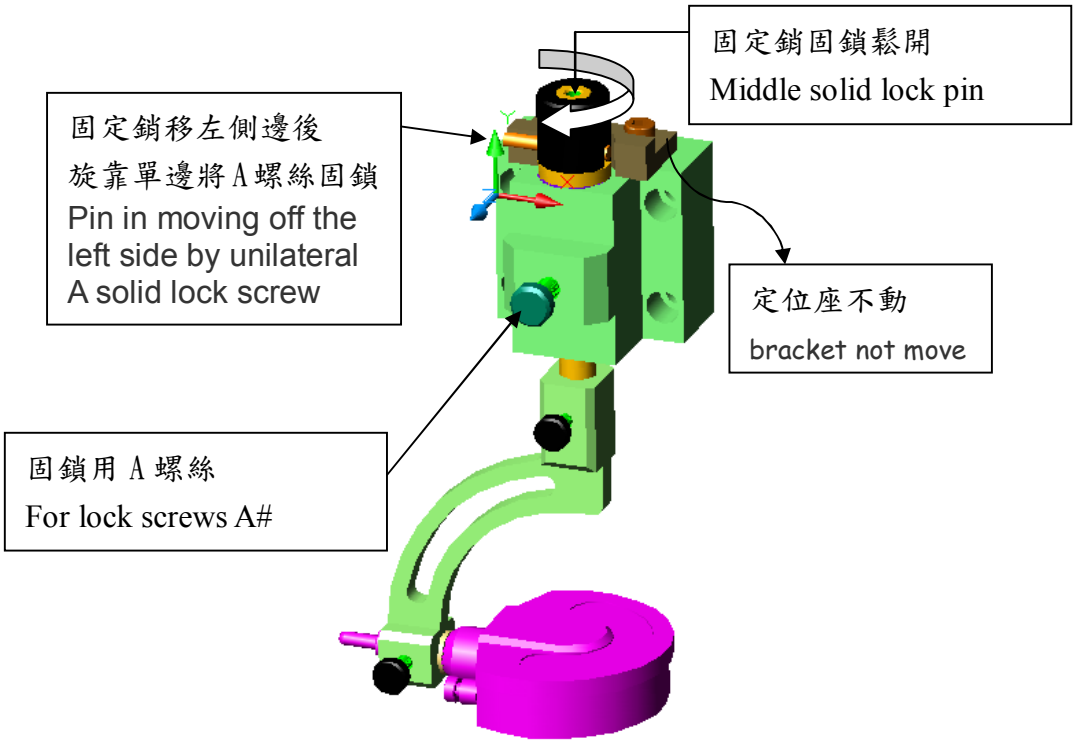
8-1.方法程序 1 ：Program 1.

左側檢出位置定位 Left measuring test Locate



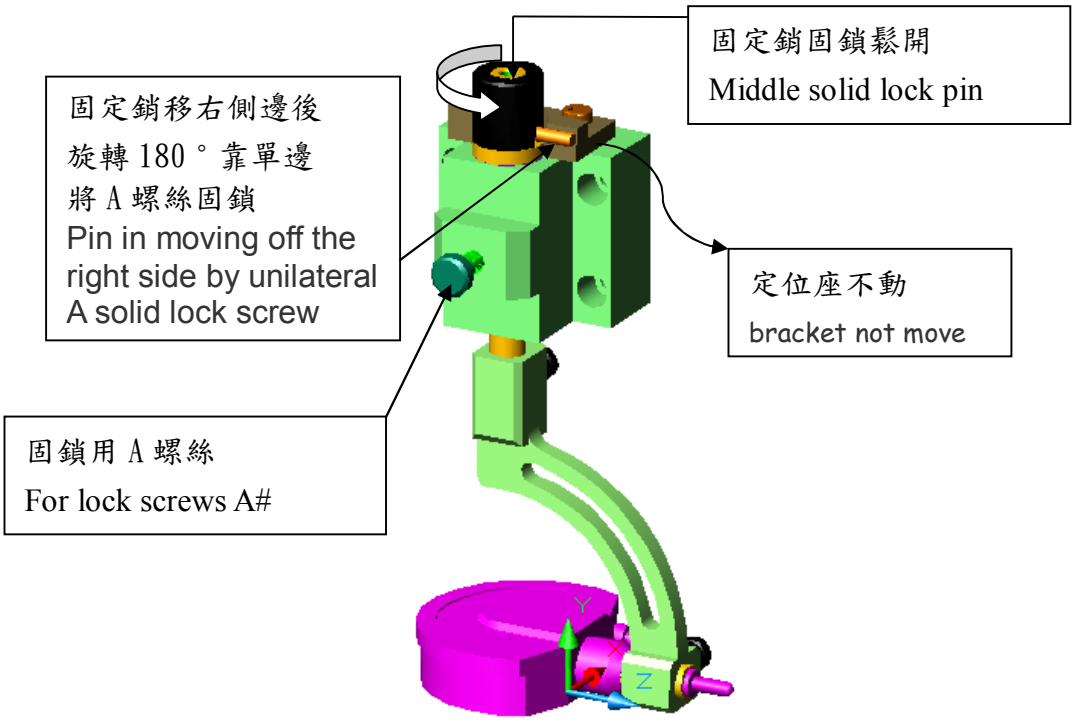
8-2.方法程序 2 ：Program 2.

左側定位檢出 Left measuring test Locate



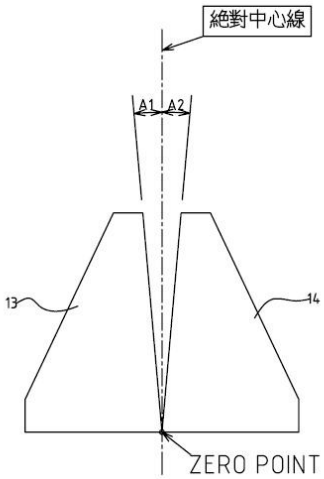
8-3.方法程序 3 ：Program 3.

右側定位檢出 Right measuring test Locate



9. 自我檢出找直角度絕對值方法

Own test method to find the absolute angles



檢出定理圖示

Test structure shown

左側檢出= A1

右側檢出= A2

絕對直角= (A1+A2)/2

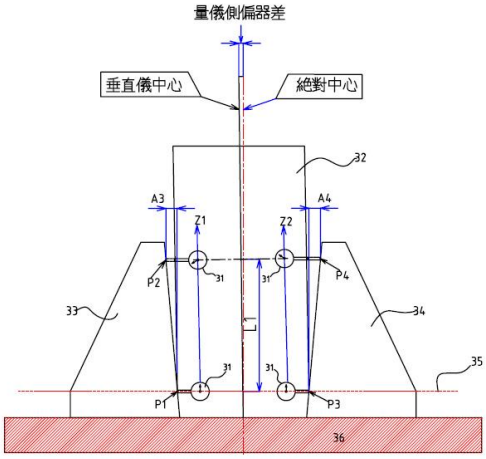
Left measuring test= A1

Right measuring test=A2

Absolute angle= (A1+A2)/2

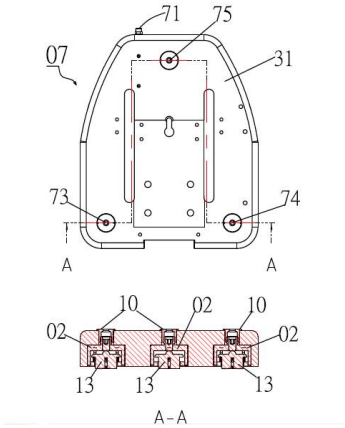
9. 用絕對直角檢出，確認器差值，找出直角度歸正方法

With the angle deviation method for zero



檢出示意

Testing shown



台座調整示意

Base adjustment shown

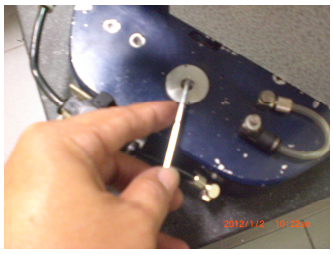
9-1.用架構定理左、右檢出，取得 53 直角規的偏差值，調整台座 Y 軸向，修正垂直儀，以板手插入 74 作調整，將垂直儀 Z 軸側偏差歸正至絕對中心。

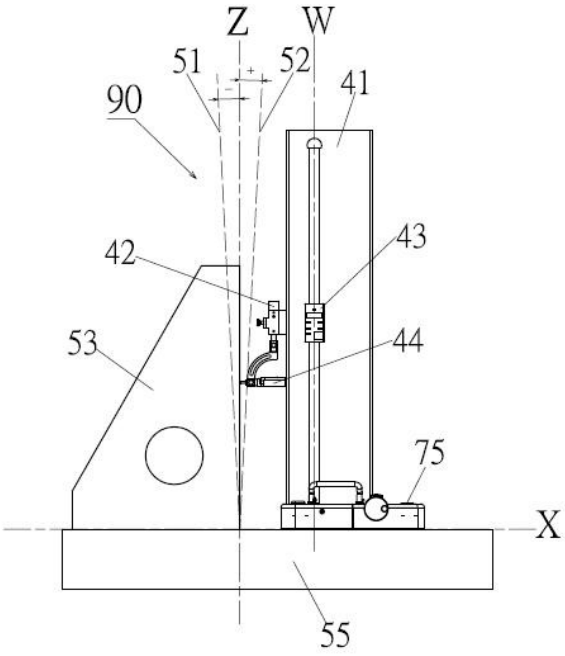
Use Left and right check structure of theorem .use 33 gauge angle deviation of the Y-axis axial adjustment of the base. Check squaremaster .Use six-wrench into the hole 74 will be adjusted.

Reformed the squaremaster Z-axis deviation to the absolute center.

9-2.用取得 53 直角規的偏差值調整台座 X 軸向，修正垂直儀，將 33 直角規轉到前方檢出，以板手插入 75 作調整，將垂直儀 Z 軸前後偏差歸正至絕對中心。

Use 33 gauge angle deviation of the X-axis axial adjustment of the base. Check squaremaster .Use six-wrench into the hole 75 will be adjusted.Reformed the squaremaster Z-axis deviation to the absolute center.





五、使用.保管注意事項
Notice

(1)本儀器必須在恆溫條件下使用。

This instrument operation should be match with a constant temperature condition.

(2)基準平板不小於1200×900×150㎜，平面度不大於3μm。

The surface plate should be 1200×900×150mm at least. And the flatness is under 3μm.

(3)確保基準平台乾淨。

To make sure a clean surface plate.

1. 本儀器適應環境

The required environment

溫度：20±1℃

Temperature： 20±1℃

濕度：50%

Humidity： 50%

2. 基準平板：建議外形尺寸不小於1200×900×150mm；

平面度5μm以內。

Surface Plate： The suggested dimension should be 1200×900×150mm at least. and the flatness is under 5um

3. 過濾器定時排水。

To exclude the moisture from this filter with a schedule time.

4. 確保基準測量平台乾淨。

To make sure a clean surface plate.

5. 出現故障即時聯繫本公司，因使用不當或擅目拆卸造成損壞不在保修範圍之列。

Please contact us once the user met any breakdown. No any guarantee for incorrect operation or dismantling by user.

六.裝箱單

Packing List

1. 主機
   Main Body
2. 附表調壓濾水組* 1set
   Schedule adjustment pressure water filters*1set
3. 六角扳手 * 1EA
   Six-wrench * 1EA
4. 使用指南
   Instruction
5. 檢定報告
   Inspection Report