目錄:

GB-519 Grinder Balancing & Monitoring

壹、 安裝注意事項:

一 主要構件名稱:

儀器主機

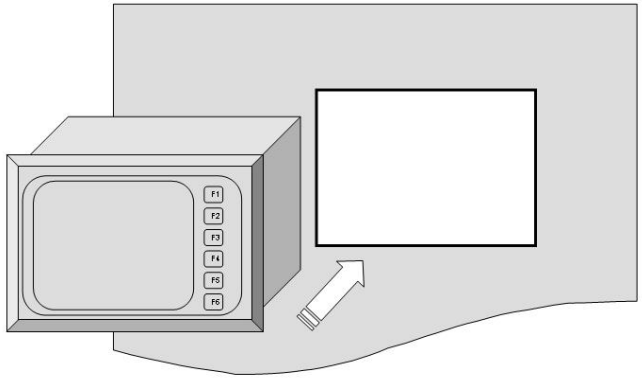
支架

振動感測器

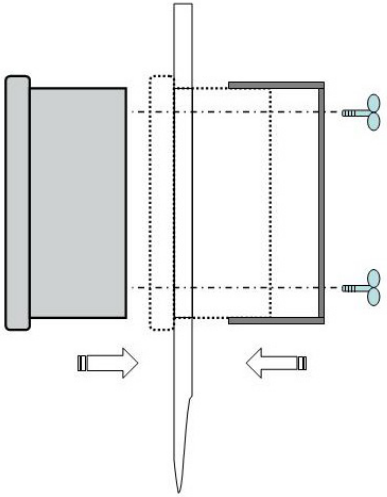
轉速感測器

電源供應器

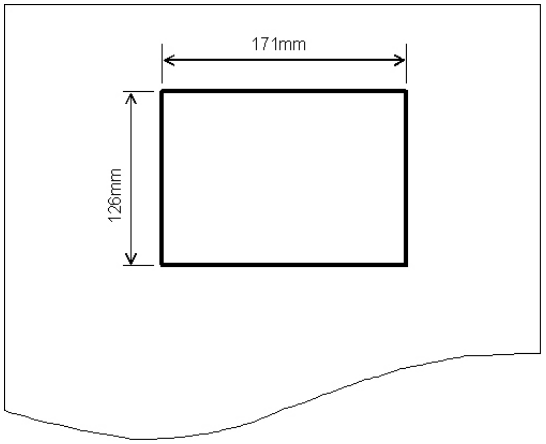
二 主機安裝與接線示意:



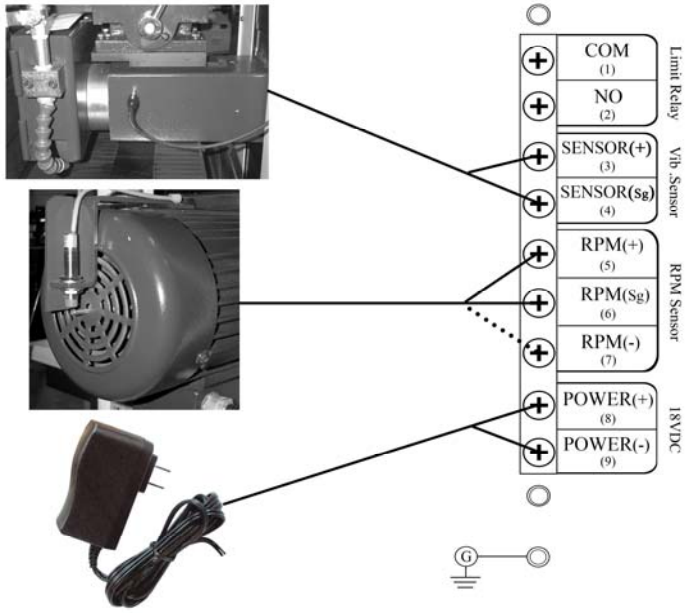
主機安裝示意圖一



主機安裝示意圖二



面板開孔尺寸圖(171mmx126mm)



接線示意圖:請依照編號將線接上對應位置,並接上地線

三 安裝注意事項:

1. 電源供應器:

1.1 請確定使用電源電壓與頻率與標示規格相同.

2. 轉速感測器:

2.1 轉速感測器對應之旋轉體轉速須與砂輪主軸轉速同步。

2.2 安裝位置與方式(範例):

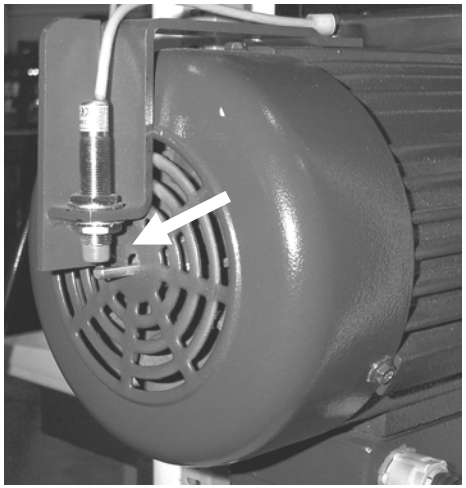
A.以 $ 8mm 螺絲攻于馬達中心孔處攻牙(深度 8mm);

B.選用 $ 8mm 適當長度(自行決定)鐵質圓棒一支(圓筒度 5μ),將一端削去 1/3 圓弧,長度約 12~15mm,以利轉速感測器感測端($ 12mm)有效感應,另一端攻外牙以便旋緊于馬達中心孔處;

C.將轉速感測器以支架固定於馬達外殼底部,調整轉速感測器紅色部位平面接近圓棒外弧約 4mm 距離(感測器有效感應距離),且此時感測器外徑需與圓棒一端對齊,安裝方式請參下圖;

D.用手轉動砂輪以確認感測器紅燈有交互閃亮爲止。

2.3 轉速感測安裝部位須加裝安全護蓋。

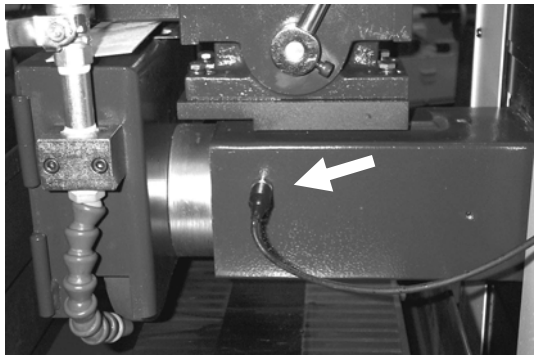


轉速感測器安裝

3. 振動感測器:

3.1. 振動感測器需安裝於接近砂輪主軸上方,並以所附之螺絲(M6螺牙)固定鎖緊,安裝方式請參下圖。

3.2. 安裝時應避免碰撞或重擊。



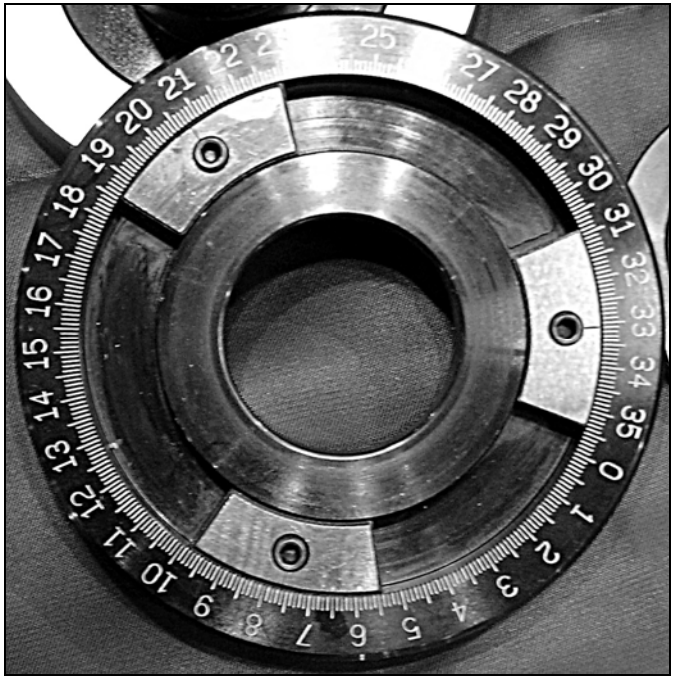
振動感測器安裝

M6 螺牙

4.　其他注意事項:

4.1 信號線(含轉速感測器與振動感測器)務必須與動力線分離安裝,以防干擾;

4.2 砂輪緣盤需於旋轉方向(正或逆向)加刻 360°角度環(1 度一刻,10 度一標;請參下圖),以利正確快速動平衡校正。



貳、 操作流程:

一 主要功能說明:

◆振動監測 F1:即時監測磨床振動,將磨床振動值與相位角顯示於顯示器上,並與所設定之容許值做比較,如磨床振動大於容許值時,振動值將以反白顯示並同時發出警示聲提醒使用者進行動平衡校正。

◆新做動平衡 F2:於換裝砂輪時,可選用此功能直接進行砂輪動平衡校正。

◆延續靜平衡 F3:於換裝砂輪時,若已事先做過靜平衡校正,則可選用此功能,在輸入砂輪靜平衡後的平衡塊角度後,即可進行砂輪動平衡校正。

◆續做動平衡 F4:若砂輪之前已在磨床上做過動平衡校正,當砂輪的振動量已超出原設定容許值時,可選用此功能進行快速砂輪動平衡校正。

◆設定容許值 F5:設定磨床可容許的振動值,單位爲μm。

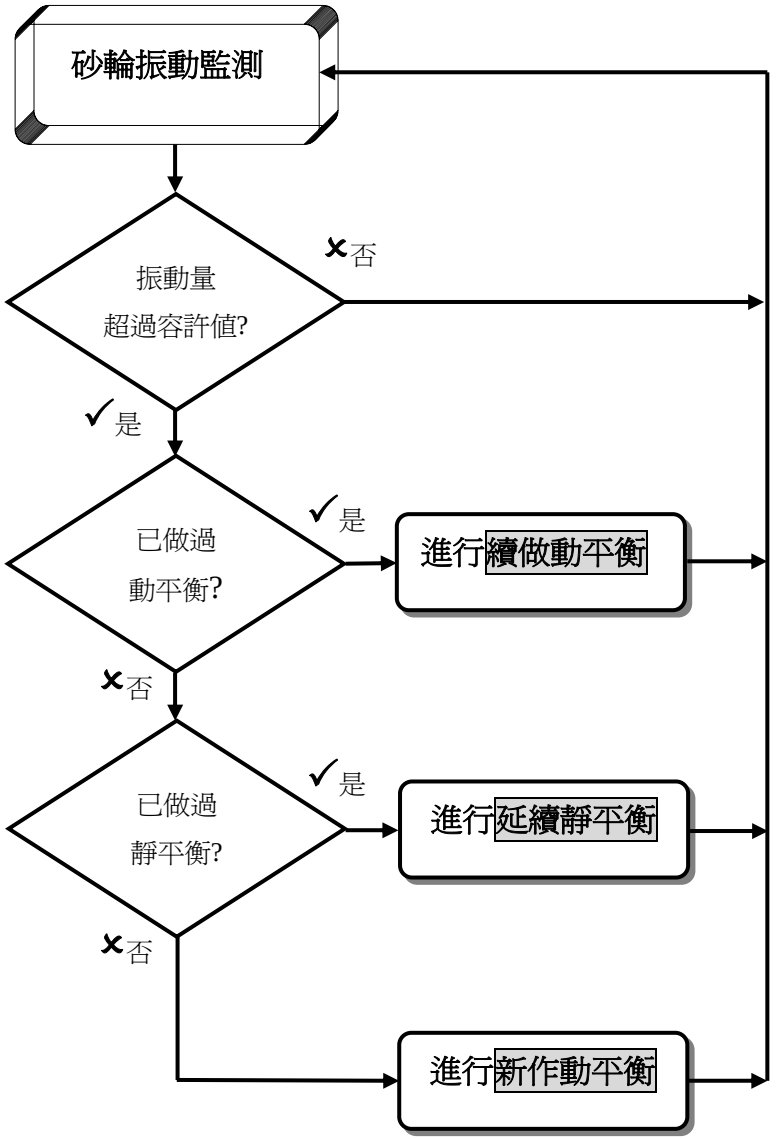
◆英文/English F6:切換系統語言文字,可選中文或英文。

二 功能規格表:

功能	規格
校正精度	0.01 μm (@1800 rpm)
量測範圍	0.01~3000 μm (@1800 rpm)
振動單位	位移 (μm : peak-peak)
相角精度	0.1°
轉速範圍	400~20000 rpm
轉速感測器	近接開關
振動感測器	加速度規
中央處理器	Vortex(32 位元高速處理器)
顯示器	320x240 dot LCD , LED 高亮度背光
電源	100 ~ 240 VAC 50/60Hz
消耗功率	7W
工作溫度	0°C ~ 50°C
主機尺寸	177 x 132 x 85 (mm)
主機重量	約 1.4kg

三 操作流程說明:

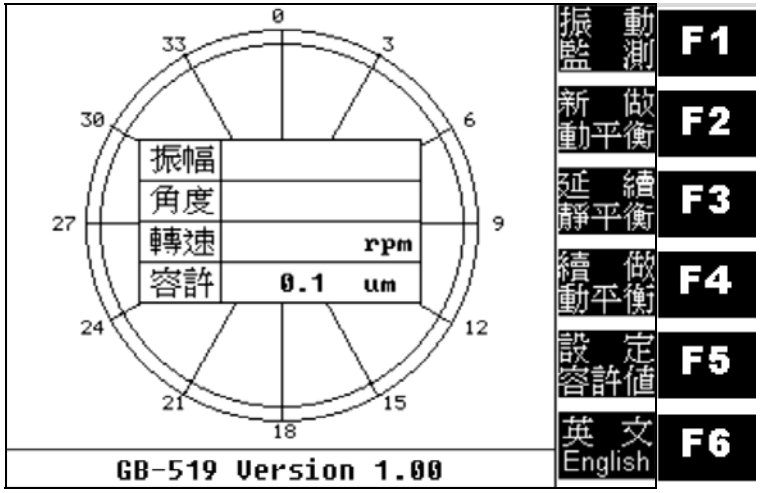
1. 操作流程圖:



2. 開機畫面:

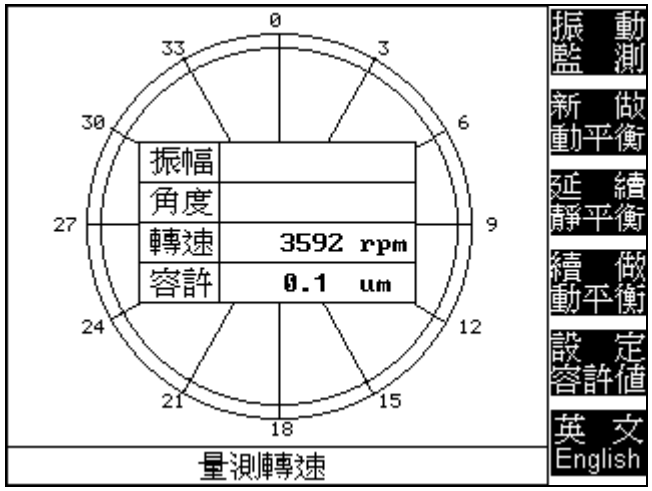
2.1 系統開機畫面:

2.2 開機後主畫面:

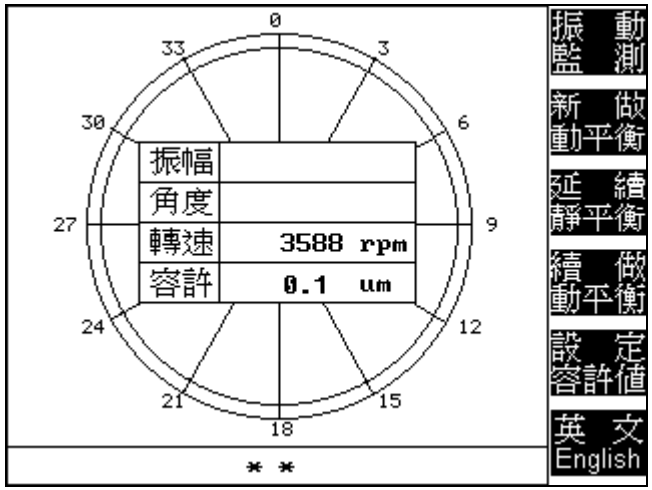


3. 振動監測:

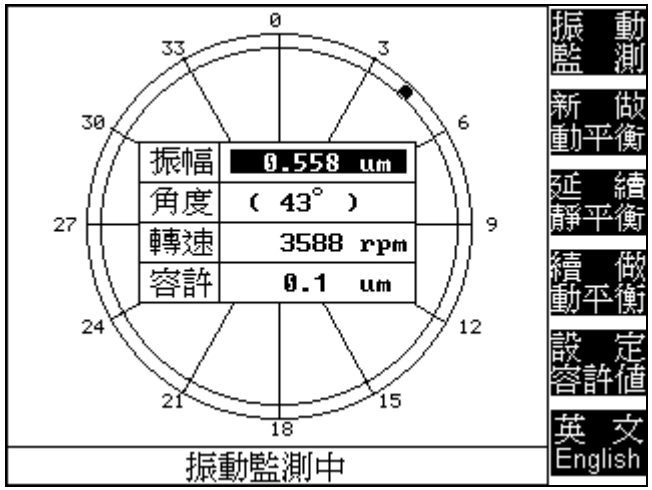
3.1 機台砂輪啓動後,將自動進行振動監測;



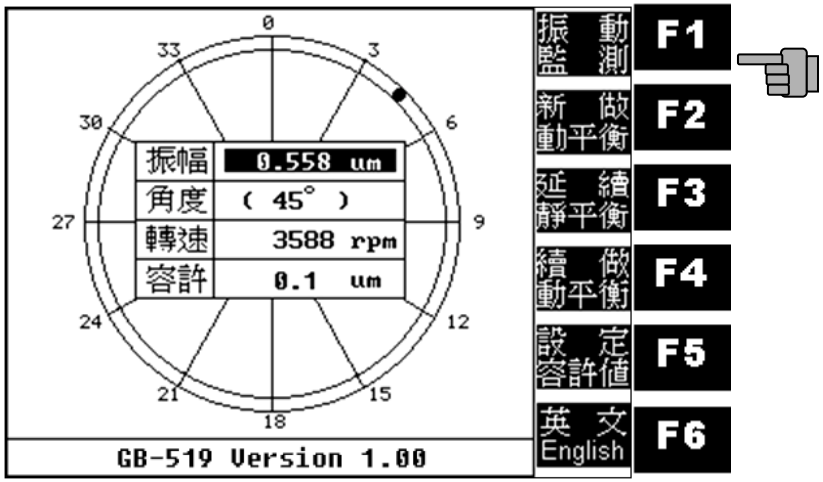
3.2 信號自動調整中..;



3.3 砂輪振動大於振動容許值時,振動值以反白顯示並發出警示聲;

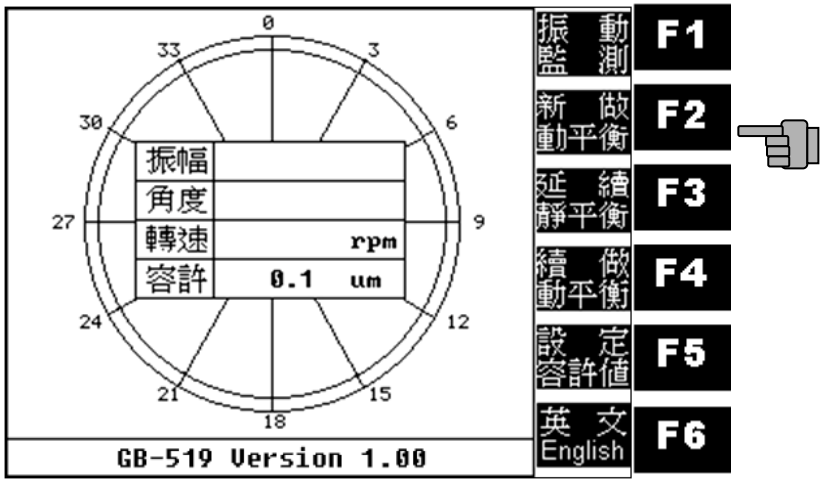


3.4 儀器量測約 10 秒鐘後,會將當時的實際振動值顯示在畫面中,若砂輪停止後再啓動將會重新執行振動監測。於砂輪運轉中欲知當時的振動狀態,可直接按 F1 鍵。

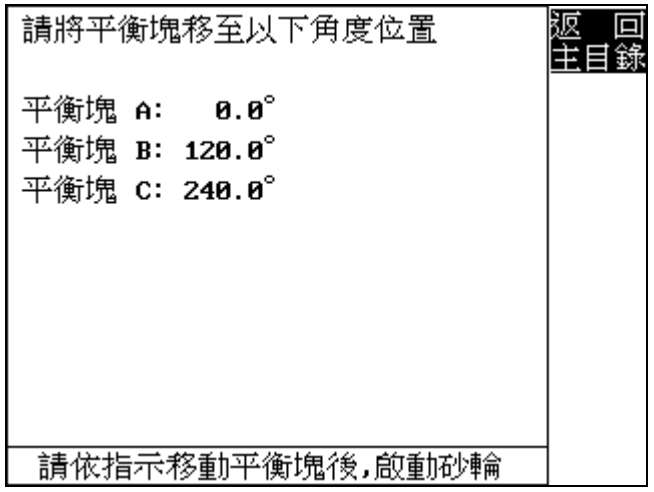


4. **新做動平衡:**

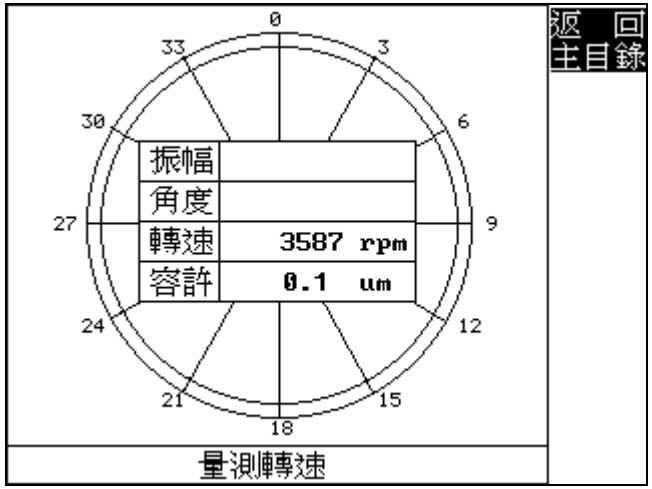
4.1 按 F2 鍵執行砂輪新做動平衡;



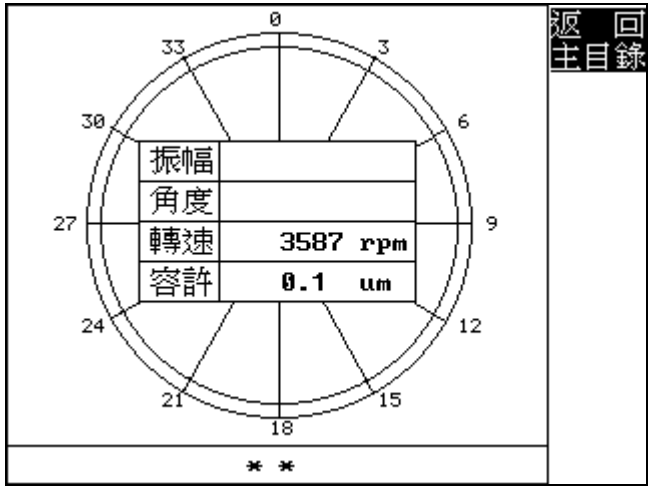
4.2 依指示將三塊平衡塊分別移至 0°、120°、240°位置,確實鎖緊後啓動砂輪。



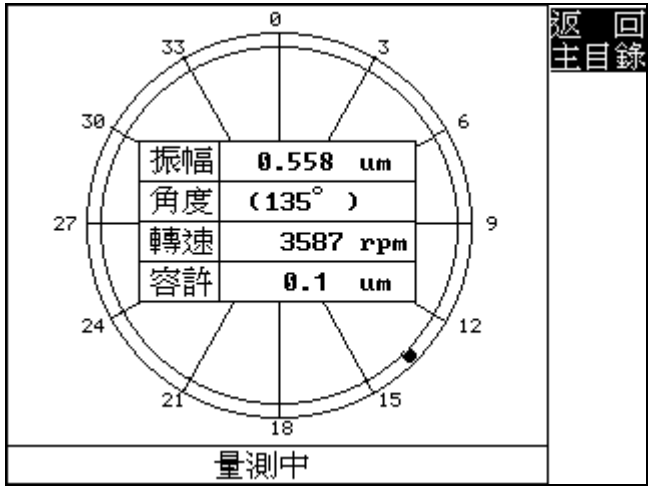
4.3 轉速量測中……;



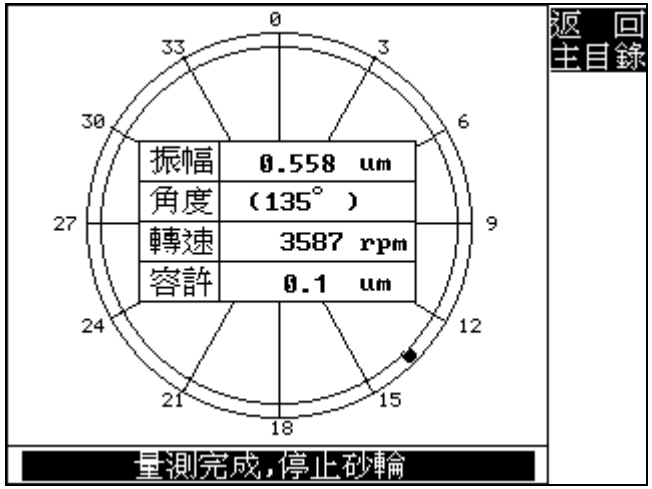
4.4 轉速穩定後執行信號讀取;



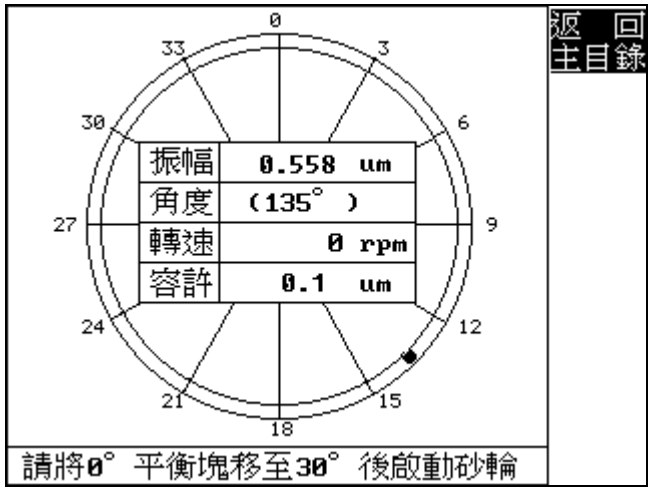
4.5 信號量測中……;



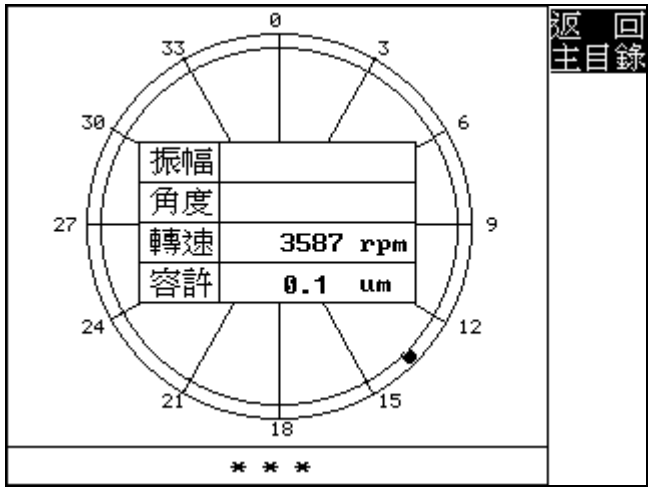
4.6 量測完成停止砂輪;



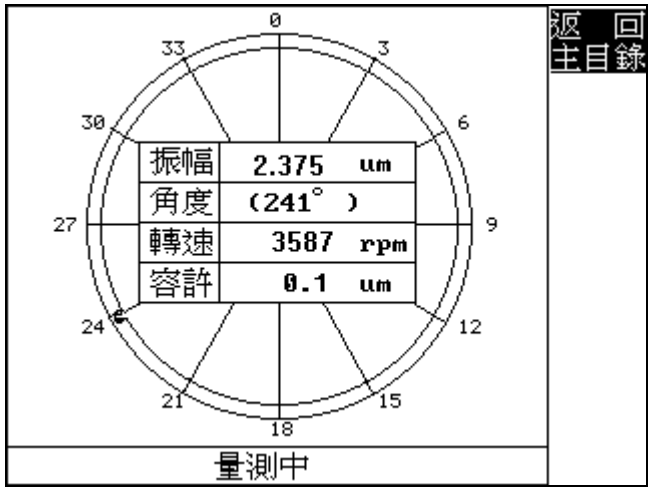
4.7 砂輪停止後,請依指示將 0˚平衡塊移至 30˚位置,確實鎖緊後啓動砂輪;



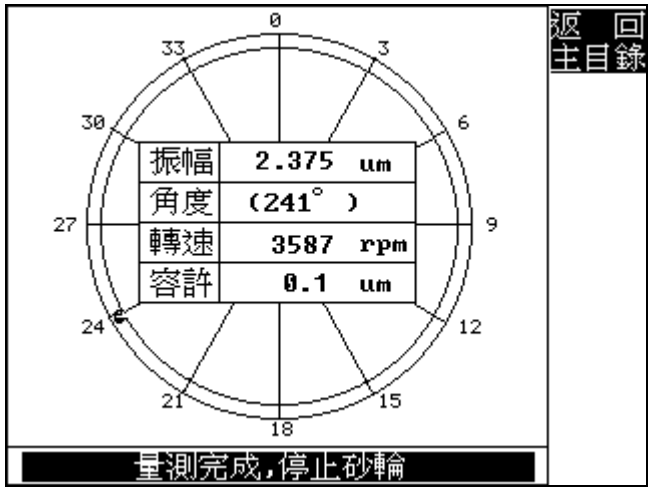
4.8 信號讀取中……;



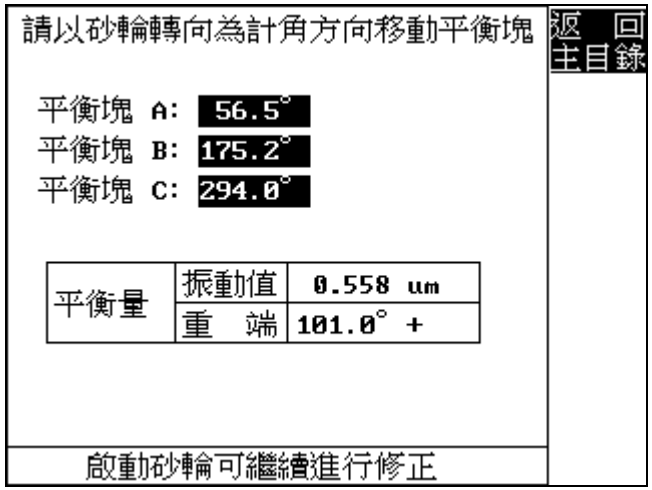
4.9 信號量測中……;



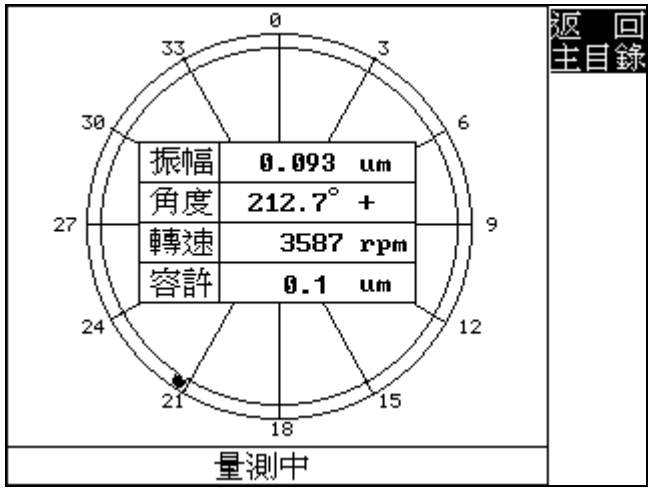
4.10 量測完成停止砂輪;



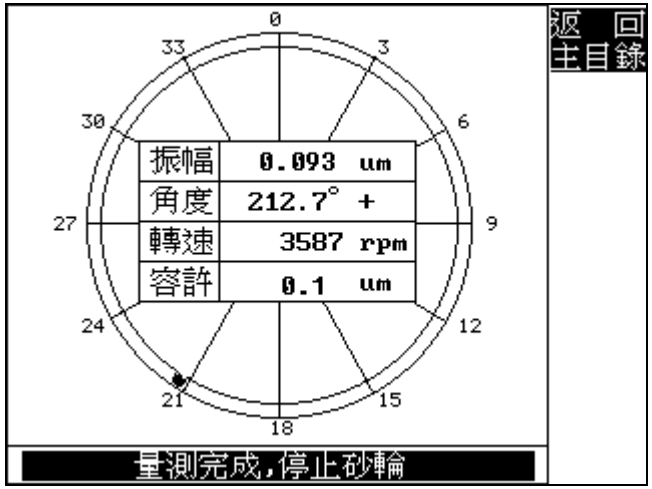
4.11 請依指示將移動三平衡塊所顯示的角度位置,確實鎖緊後啓動砂輪;



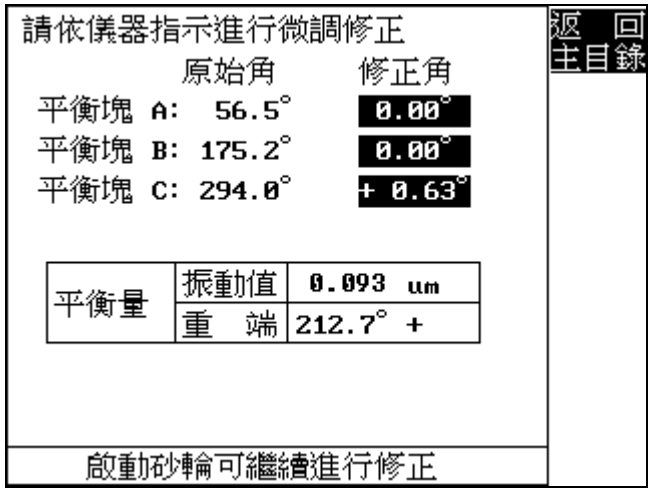
4.12 信號量測中……;



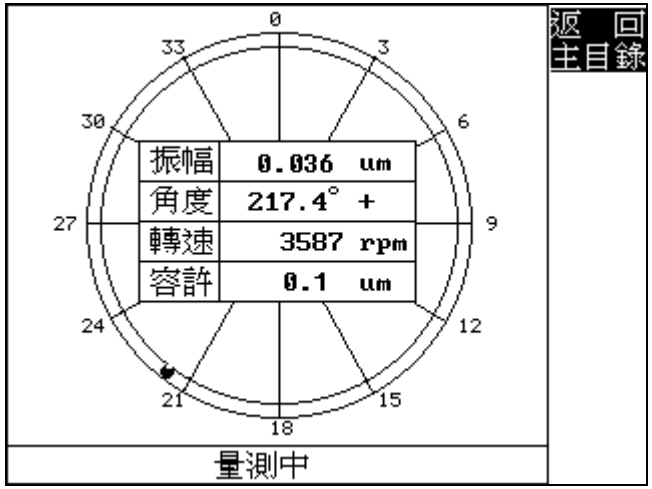
4.13 量測完成停止砂輪;



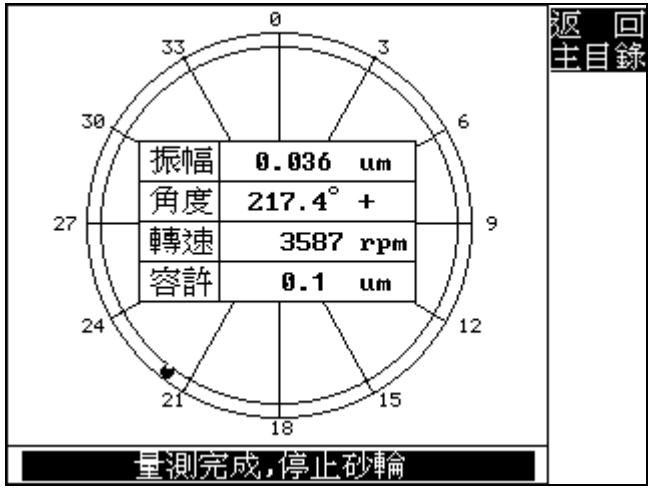
4.14 若砂輪的振動值仍未達到所設定容許值時,請再依所顯示修正角度微調平衡塊(以本畫面爲例,僅需修正平衡塊C,依砂輪旋轉方向移動0.63°),確實鎖緊後啓動砂輪;



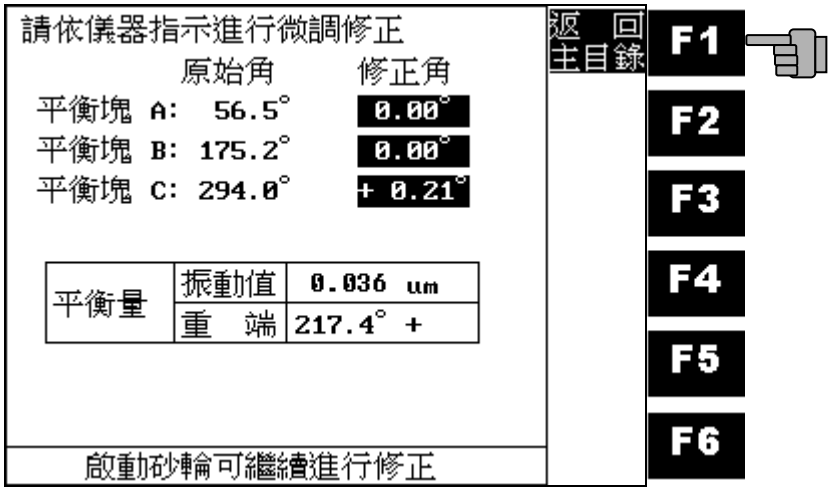
4.15 微調後量測中……;



4.16 量測完成停止砂輪;

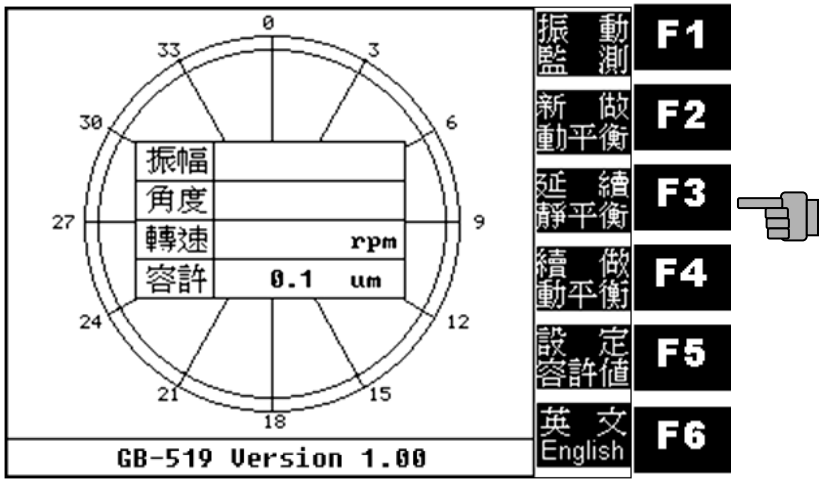


4.17 可再依所顯示修正角度微調平衡塊繼續進行修正,以達最佳振動狀態,或按 F1 鍵結束動平衡校正作業返回振動監測功能。

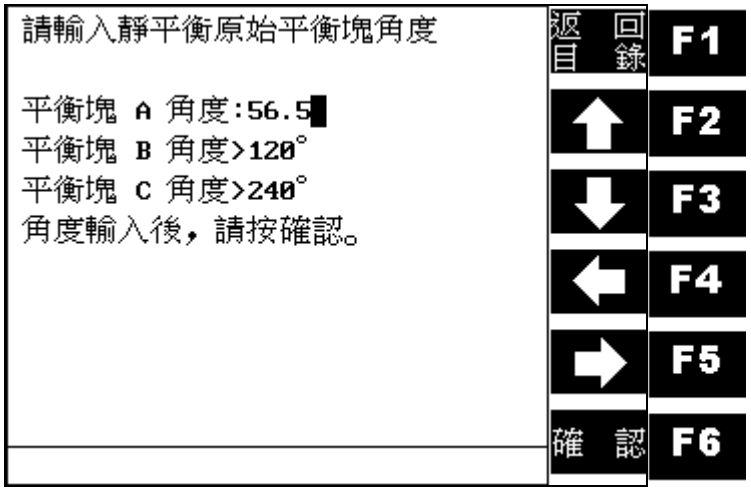


5. 延續靜平衡:

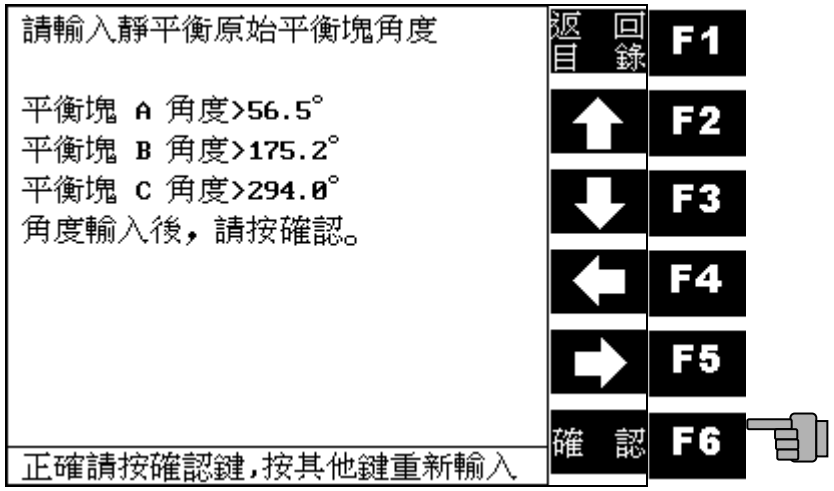
5.1 按 F3 鍵執行延續靜平衡功能;



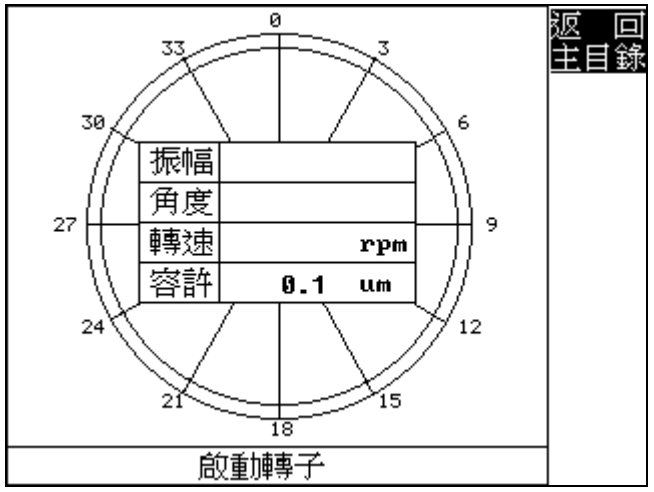
5.2 請用 F2~F5 游標鍵與確認鍵逐一正確輸入砂輪上的三塊平衡塊角度;



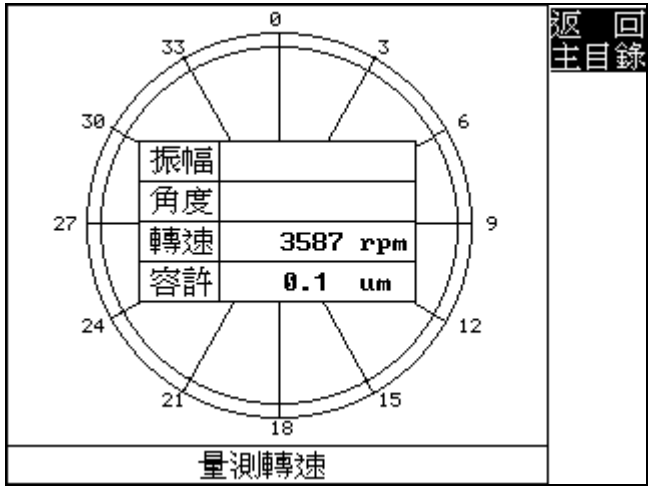
5.3 輸入完成後,按 F6 鍵繼續下一步驟;



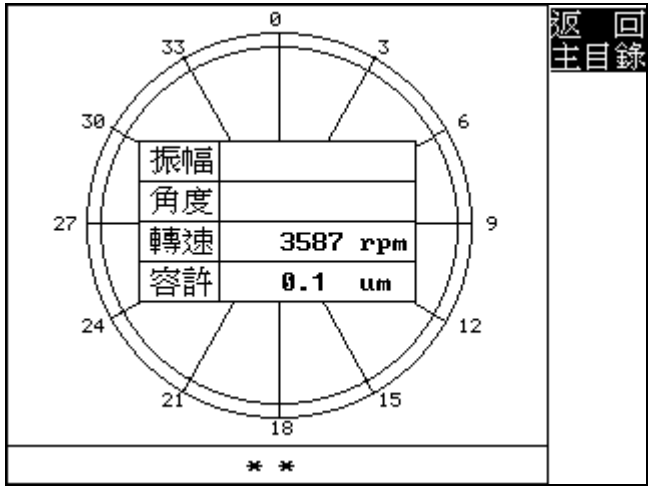
5.4 啓動砂輪執行量測;



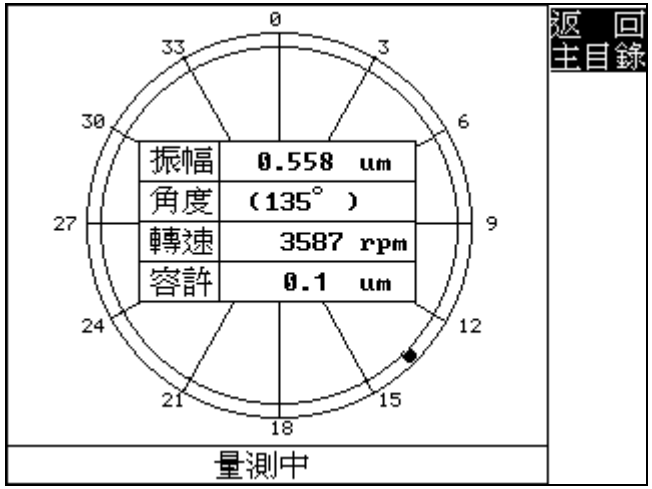
5.5 轉速量測中……;



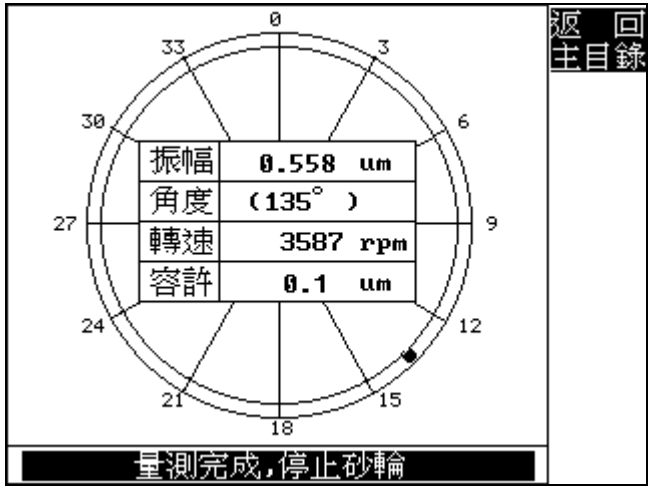
5.6 轉速穩定後執行信號讀取;



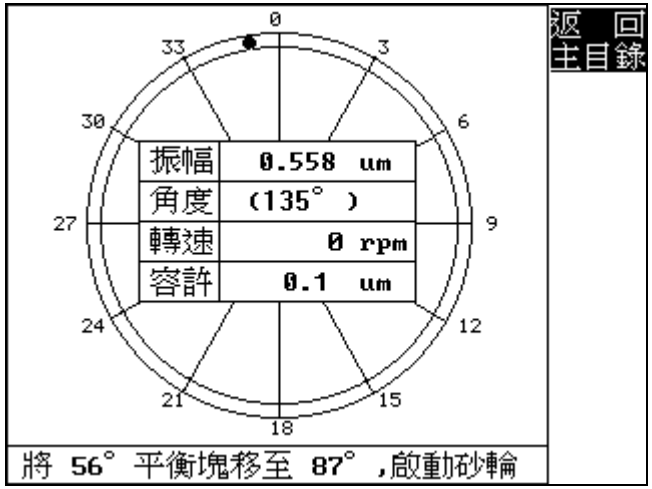
5.7 信號量測中……;



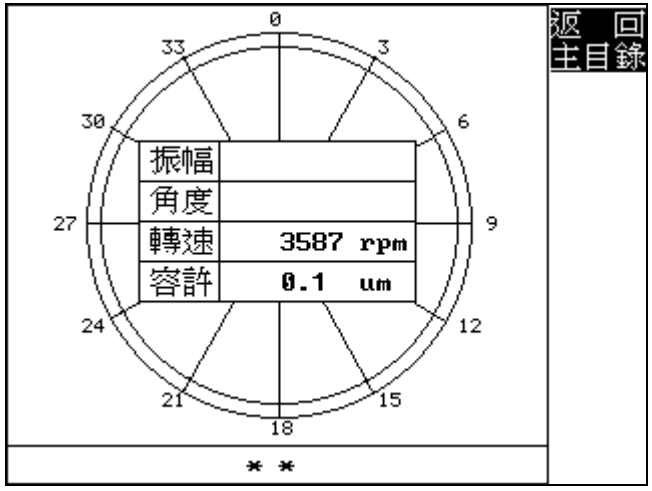
5.8 量測完成停止砂輪;



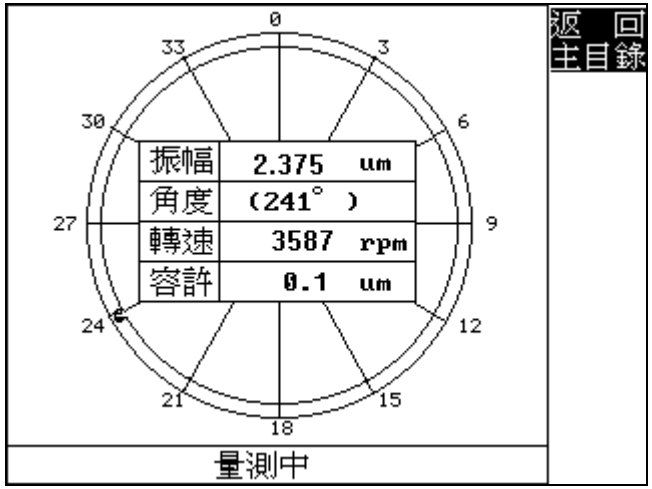
5.9 砂輪停止後,請依指示移動平衡塊,確實鎖緊後啓動砂輪;



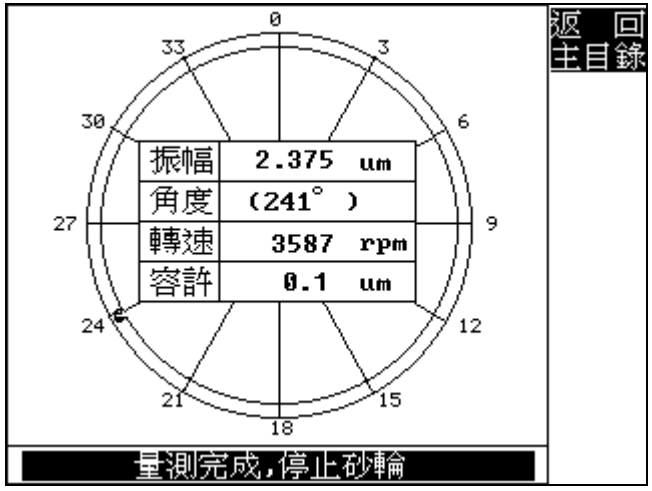
5.10 信號讀取中……;



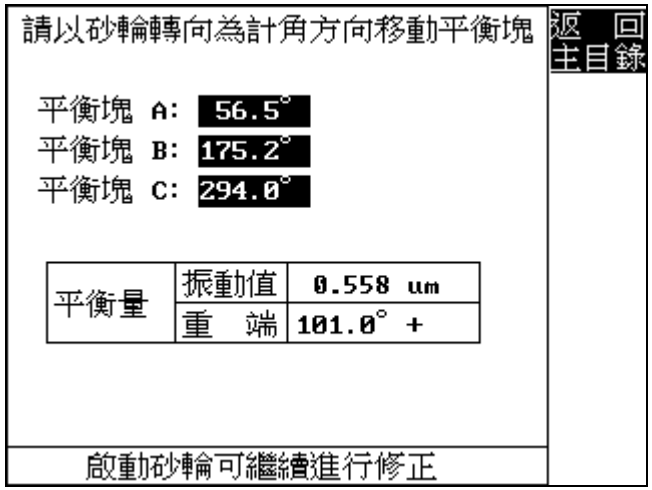
5.11 信號量測中……;



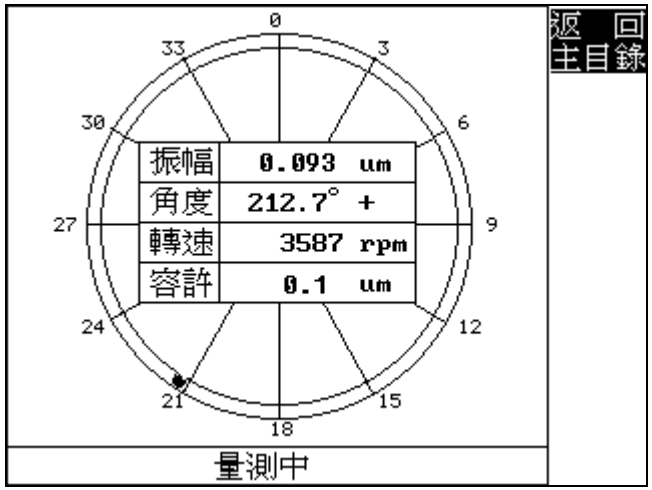
5.12 量測完成停止砂輪;



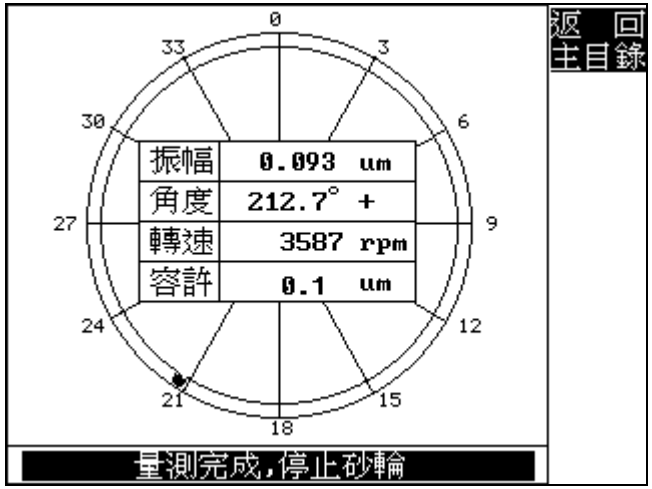
5.13 請依指示將移動三平衡塊所顯示的角度位置,確實鎖緊後啓動砂輪;



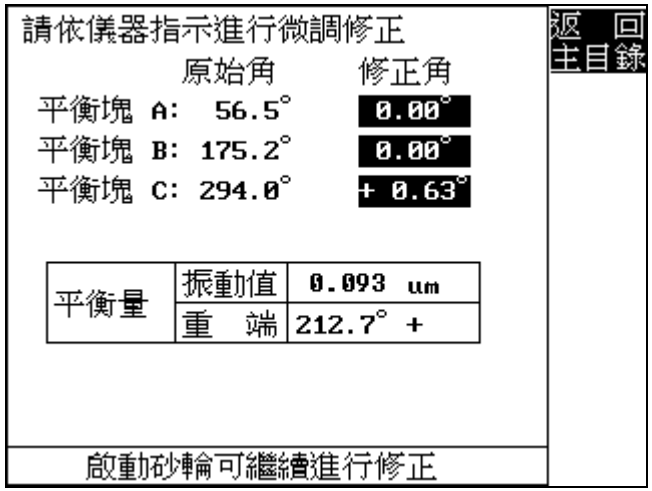
5.14 信號量測中……;



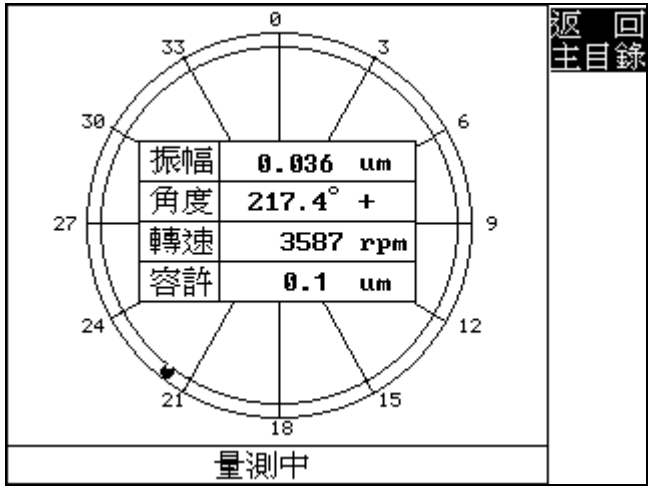
5.15 量測完成停止砂輪;



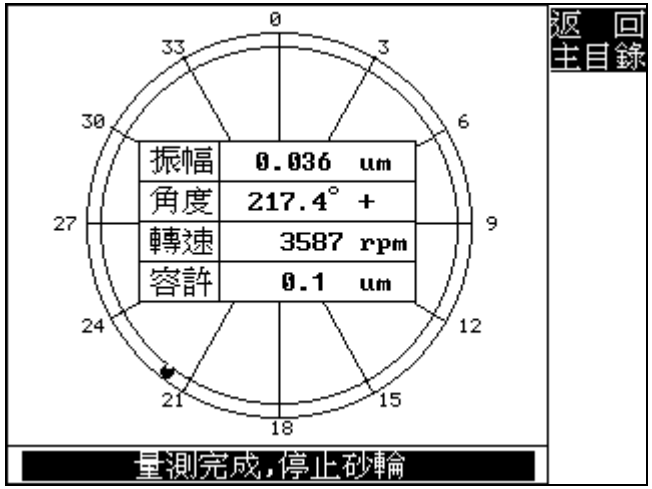
5.16 若砂輪的振動值仍未達到所設定容許值時,請再依所顯示修正角度微調平衡塊(以本畫面爲例,僅需修正平衡塊C,依砂輪旋轉方向移動0.63°),確實鎖緊後啓動砂輪;



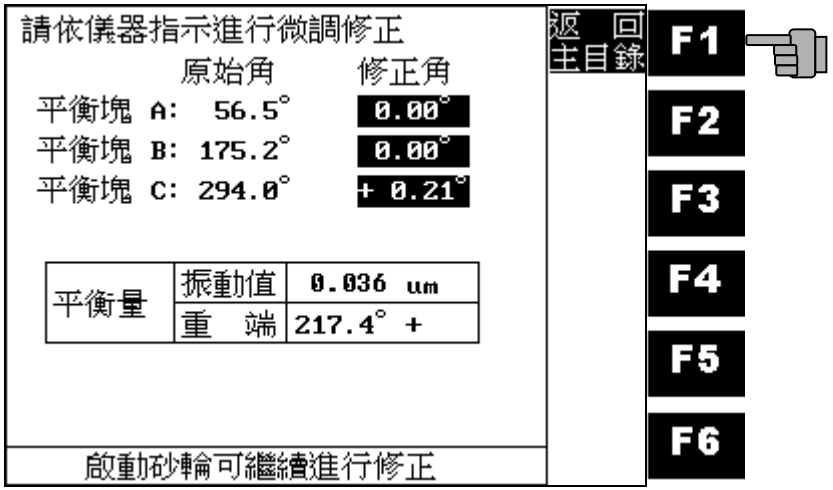
5.17 微調後量測中……;



5.18 量測完成停止砂輪;

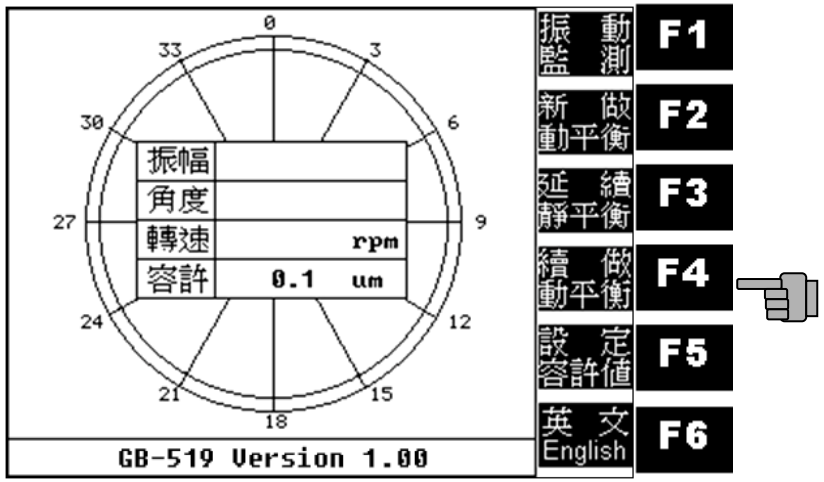


5.19 可再依所顯示修正角度微調平衡塊繼續進行修正,以達最佳振動狀態,或按 F1 鍵結束動平衡校正作業返回振動監測功能。

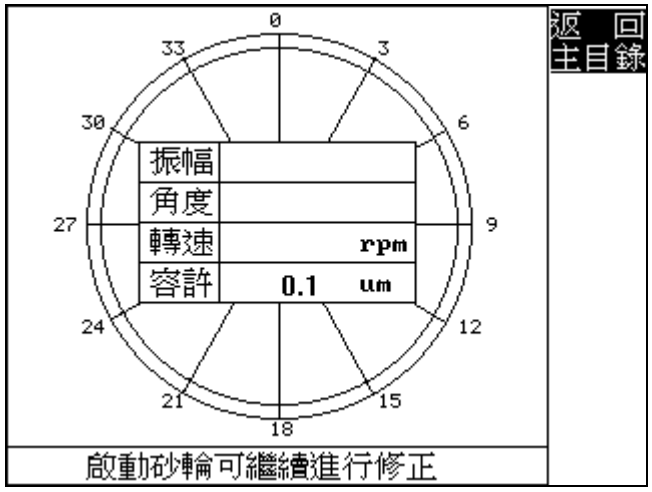


6. 續做動平衡:

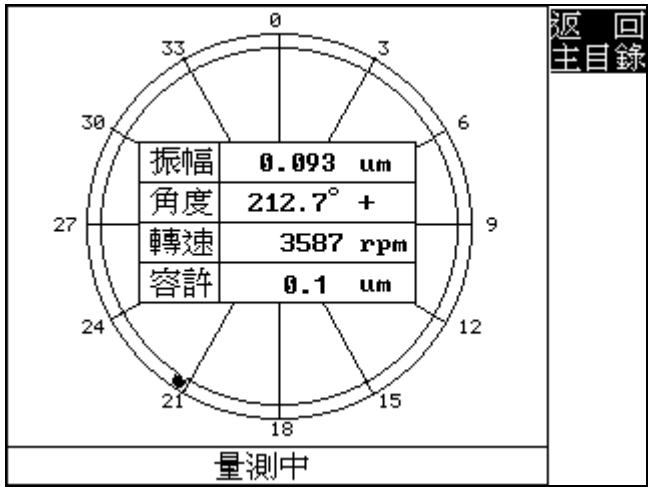
6.1 按 F4 鍵執行續做動平衡功能;



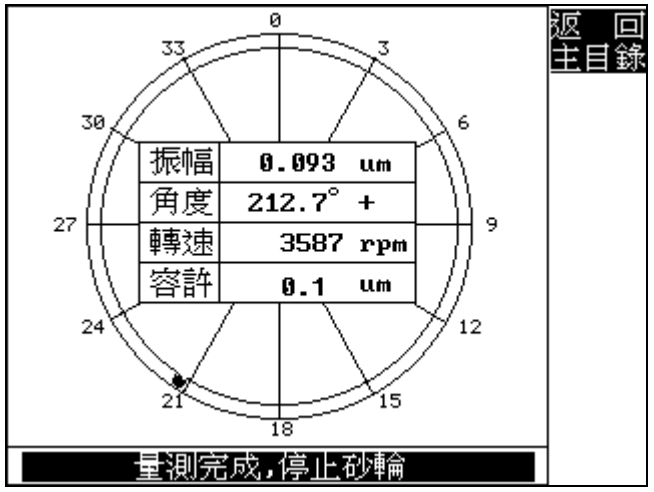
6.2 啓動砂輪,進行續做動平衡;



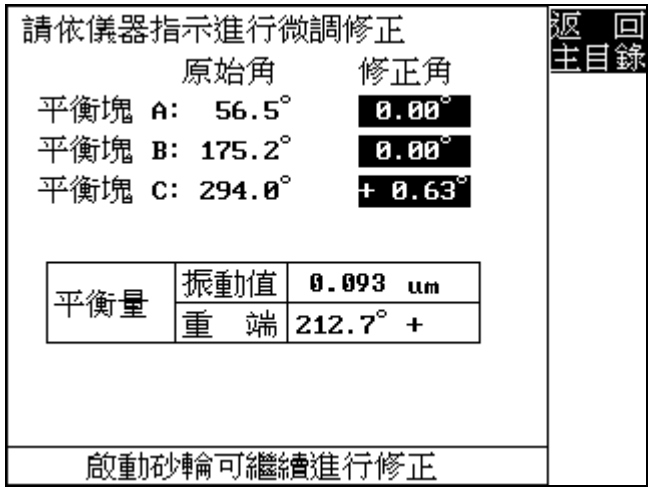
6.3 信號量測中……;



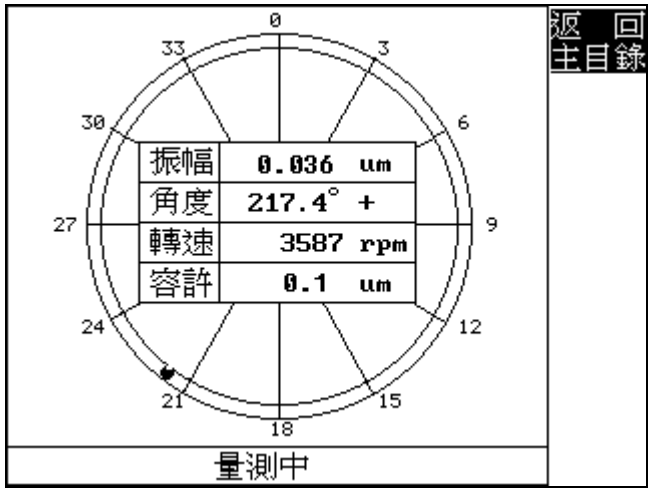
6.4 量測完成停止砂輪;



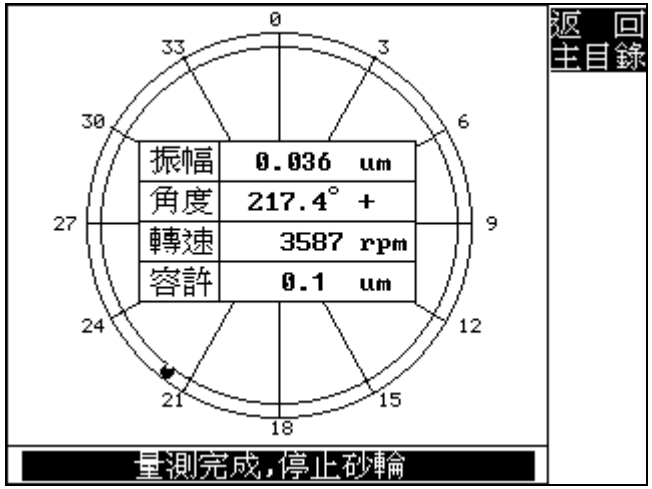
6.5 請依所顯示修正角度微調平衡塊(以本畫面爲例,僅需修正平衡塊 C,依砂輪旋轉方向移動 0.63°),確實鎖緊後啓動砂輪。



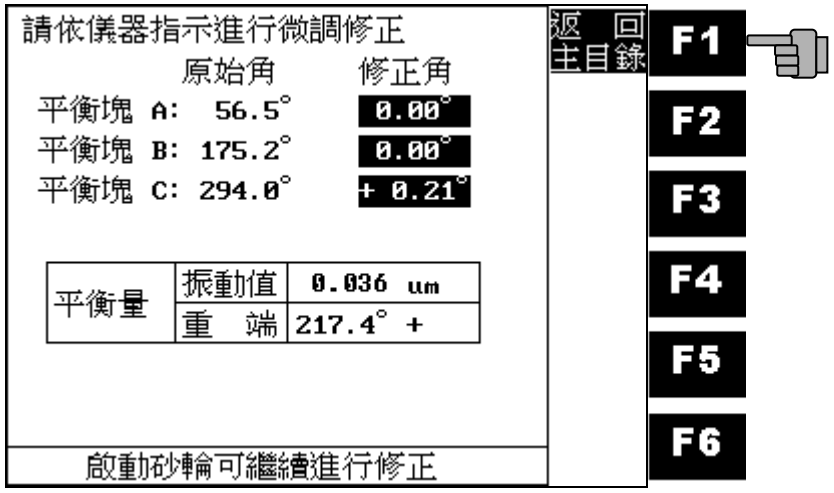
6.6 微調後量測中……;



6.7 量測完成停止砂輪;

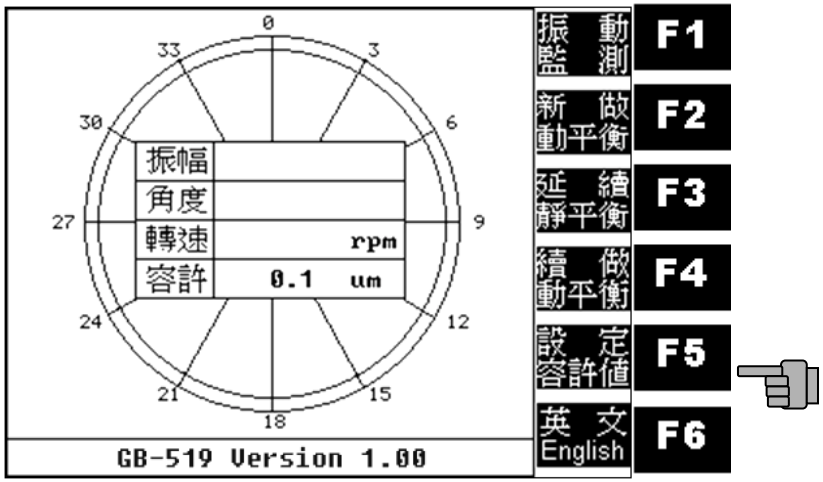


6.8 可再依所顯示修正角度微調平衡塊繼續進行修正,以達最佳振動狀態,或按 F1 鍵結束動平衡校正作業返回振動監測功能;

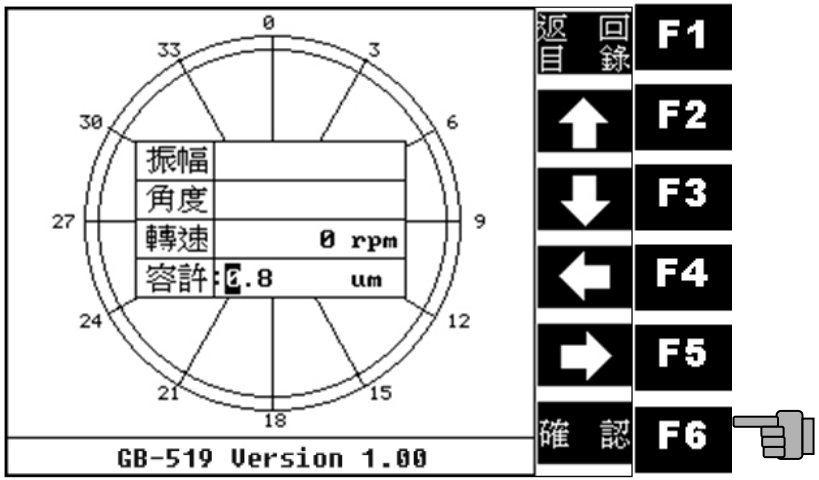


7. 容許值設定:

7.1 按 F5 鍵執行振動容許值設定;

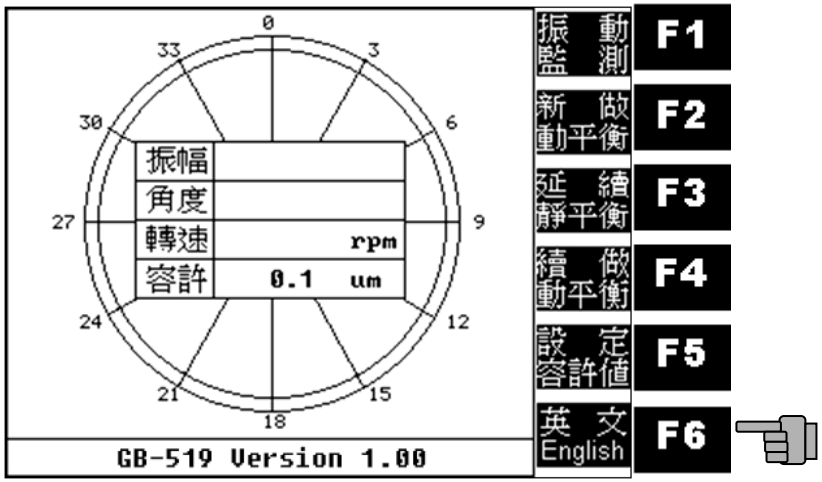


7.2 請用 F2~F5 游標鍵輸入欲設定的振動容許值,於按下 F6 確認鍵後將儲存該設定值;



8. 中/英文版本切換:

8.1 連續按 F6 鍵 2 次,即可執行中/英文版本切換功能。



參、 簡易故障排除:

異常狀況	原因	對策
開啓電源後無顯示畫面	電源接頭未接妥	檢查電源接線
	電源供應器故障	更換新品
	電源電壓錯誤	請依規格使用正確電壓
無法量測	轉速感測器接頭未接妥	拆下後從新接上
	轉速感測器鬆脫	檢查並確實鎖緊
	轉速感測器故障	送回原廠檢修
量測振動值不對	振動感測器接頭未接妥	拆下重新接上
	振動感測器鬆脫	檢查並確實鎖緊
	振動感測器信號線開路或短路	送回原廠檢修
	振動感測器故障	送回原廠檢修

GB-519 Grinder Balancing & Monitoring

肆、 產品保證書:

宏富鑫股份有限公司

產品服務保證書

客戶名稱			
地址			
電話		傳真	
機型	GB-519	儀器序號	
振動感測器	DTE150-1A	感測器序號	
購買日期		保證期限	

保證說明:

1. 本產品在出廠時,其精度及性能均在所標定之規格範圍內
2. 本產品在保證期間內,享有完善之維修及售後免費服務
3. 本產品保證期限爲自購買日起算一年內有效.
4. 遇有下列情形之一,本公司得按價收費
   a. 超過保證期限者,憑保證書得酌收材料成本費
   b. 保證書記載內容(品名,機型,序號)與現物不同者
   c. 因天災,人爲因素等所造成之損壞
5. 本保證書如經塗改則視爲無效,如有遺失恕不補發敬請妥善保存

公司地址:
台北縣汐止市康寧街169巷29-1號9樓之2
電話:+886-2-86931767
傳真:+886-2-26958530
http://www. pan-grand.com
E-mail: service@pan-grand.com

記事:

GB-519 Grinder Balancing & Monitoring

Contents:

Pan-Grand International

I. Installation:

A、 Packing List:

Main Body

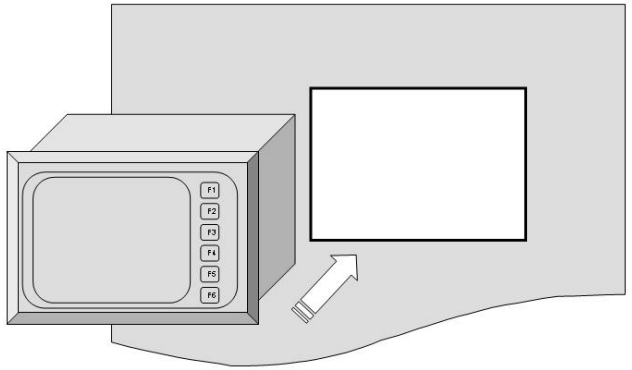
Mounting Frame

Vibration Sensor

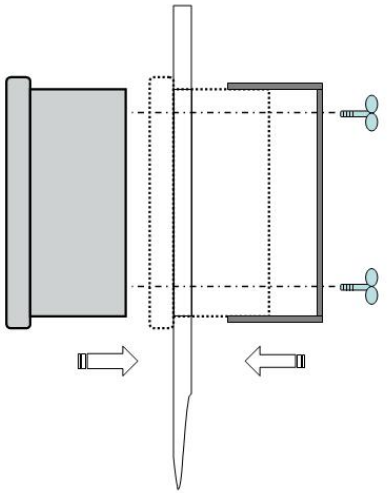
RPM Sensor

Power Adaptor

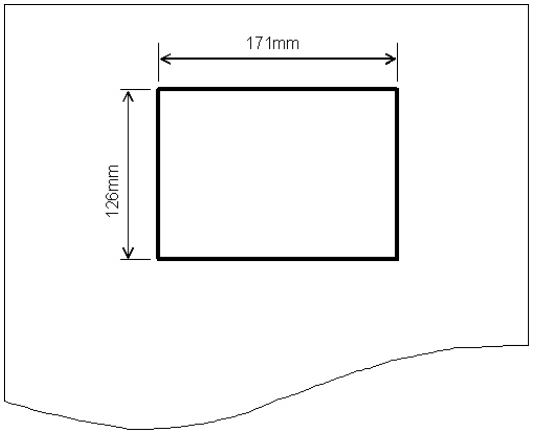
B、 Installation Diagram:



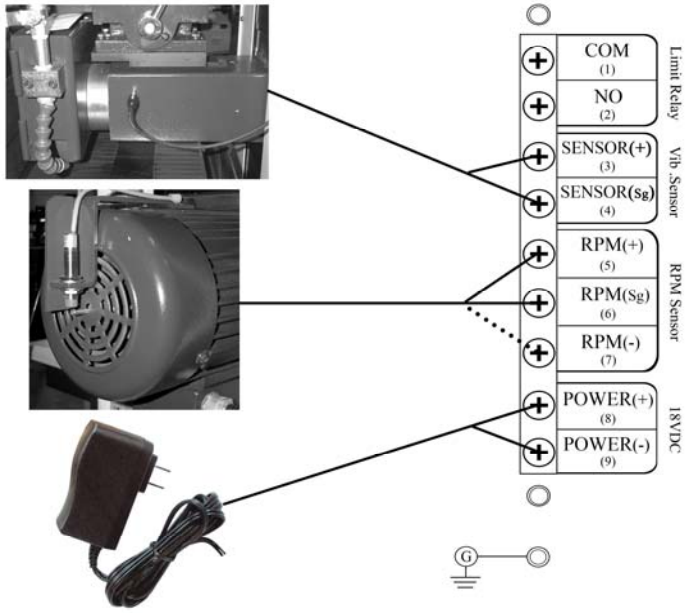
Main Body Installation Diagram 1



Main Body Installation Diagram 2



Panel Mount Hole Size (171mmX126mm)



System Connection Diagram

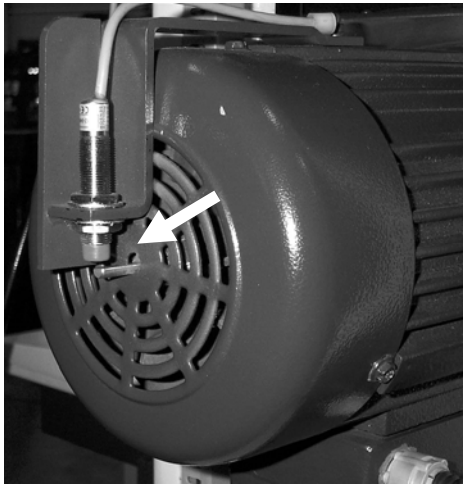
C、 Installation Guide

i. POWER ADAPTOR:

1. Make sure of power voltage & frequency match with specification.

ii. RPM SENSOR:

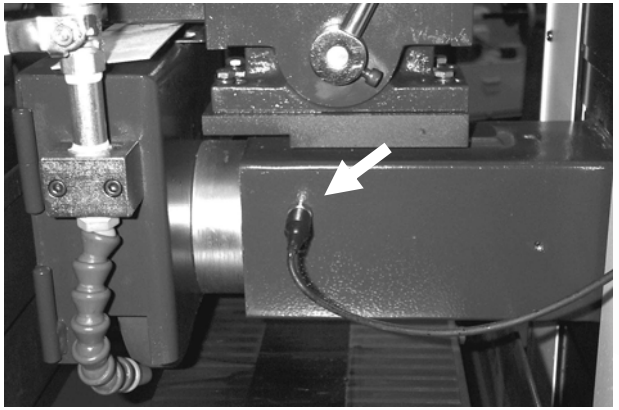
1. The location and method of setup(example):
   - To choose the thread taper(∮ 8mm) to take a thread(long 8mm) in the center hole of motor,
   - To choose a steel round bar(∮ 8mm),and cut of one third curve from one top(long 12~15mm),then make the thread on another top to lock in the threaded motor,
   - To make RPM sensor lock on the bottom of motor with mount break, and adjust correctly the red flat(∮ 12mm) of RPM sensor closer to the outside curve of round bar within 4mm,please reference installation photo to setup,
   - To rotate the wheels until the red light spot flash interactively.



RPM Sensor Setup

ii. VIBRATION SENSOR:

1. Reference installation example photo to set up.
2. Please do neither drop nor shock the vibration sensor.
3. Install vibration sensor near to spindle, do not install on cover of wheels because the resonance will affect the balancing precision.

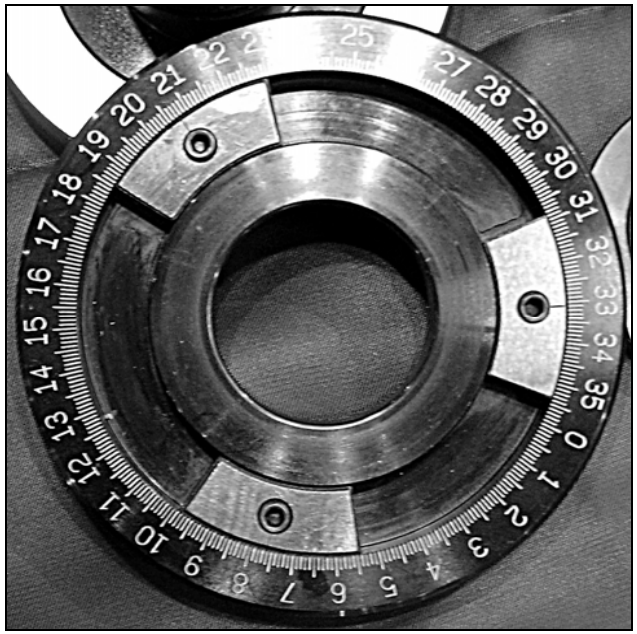


Vibration Sensor Setup

M6 Thread

iii. Others:

1. Sensor's signal wire must be far away from system power line to avoid interference.
2. It's necessary to etch angle on the flange. (Reference photo)



II. Operation Guide:

A、 Main Function:

- **VIB. MON.** F1:
  - To monitor the wheel's Balance in time.
- **NEW BAL.** F2:
  - Wheel's balanced dynamically on line.
- **LAST BAL.** F3:
  - Wheel's balanced dynamically on line after static balancing.
- **CONT BAL.** F4:
  - While wheel's vibration is over than set up initially, it can be balanced dynamically in time.
- **TOL. SET** F5:
  - To set up the vibration allowable of grinder, it will give notice to operator to balance wheel, when the vibration is over set-up initially.
- **Chinese/中文** F6:
  - Switch System Language; Chinese and English could be selected.

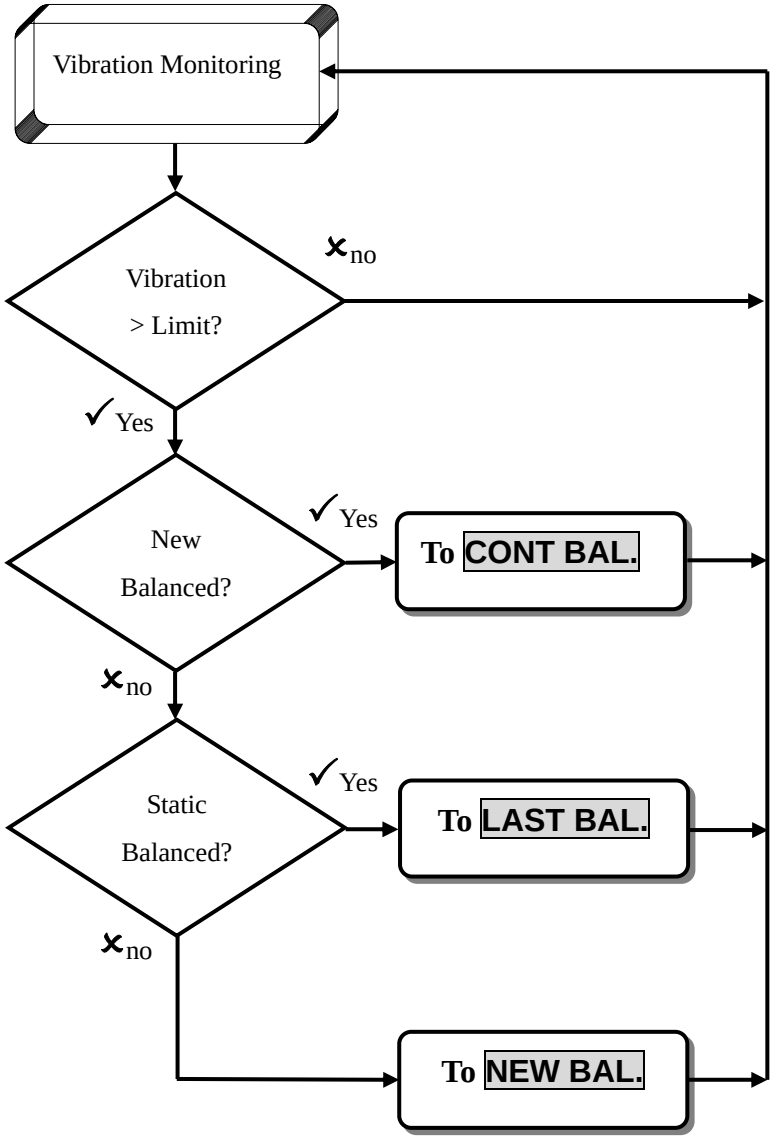
B、 SPECIFICATION:

Function	Specification
Accuracy	0.01 μm (@1800 rpm)
Range	0.01~3000 μm (@1800 rpm)
Unit	Displacement (μm : peak-peak)
Phase	0.1°
RPM Range	400~20000 rpm
RPM Sensor	Magnetic Sensor
Vibration Sensor	Accelerometer
CPU	Vortex(32bit)
Display	320x240 dot LCD, LED Back-light
Power	100 ~ 240 VAC 50/60Hz (with adaptor)
Consumer	7W
Temperature	0°C ~ 50°C
Size	177 x 132 x 85 (mm)
Weight	About 1.4kg

GB-519 Grinder Balancing & Monitoring

C、 Operation Guide

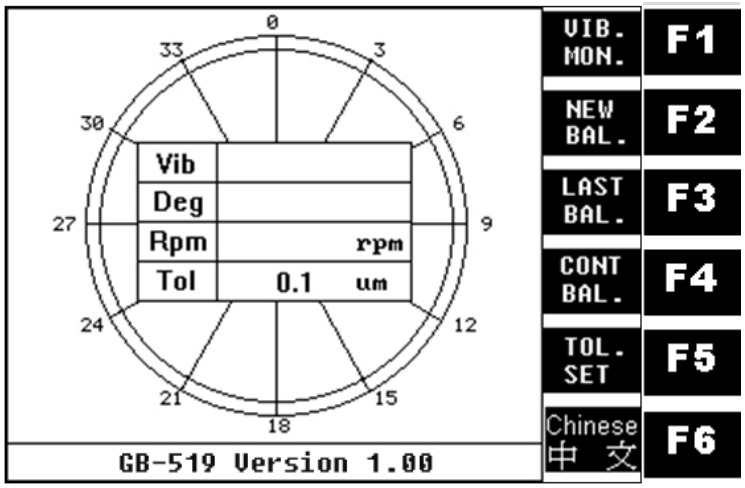
i. Operation flow chart:



ii. System Start:

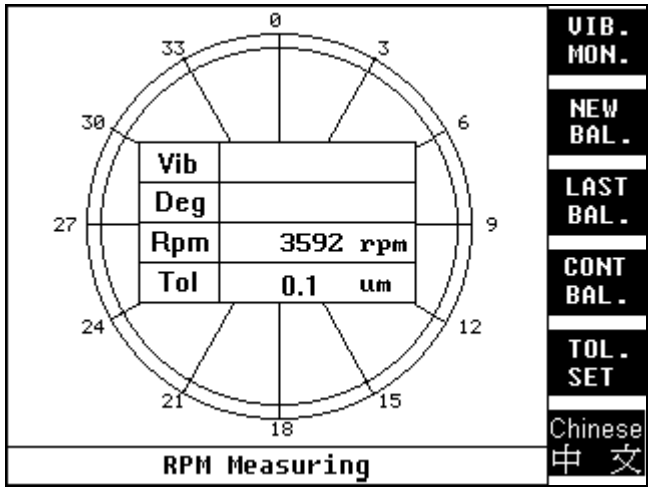
1. System Start Up

2. Main Menu after system started

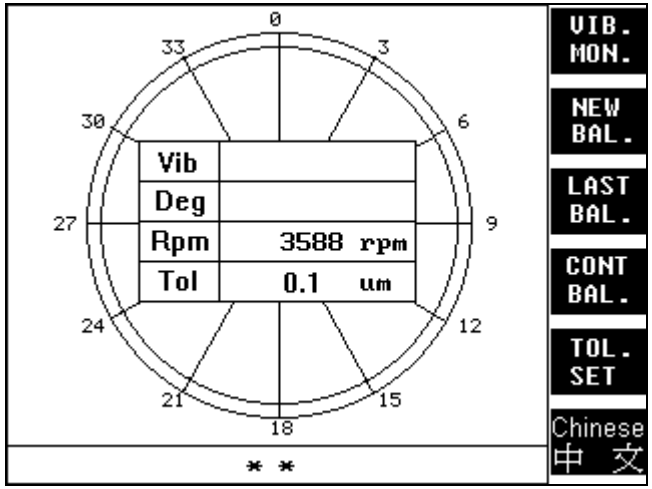


iii. Vibration Monitor:

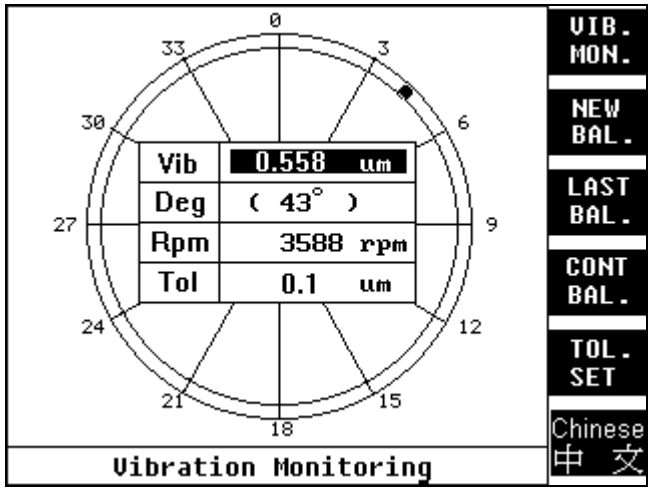
1. Enter into vibration monitoring mode when wheel started.



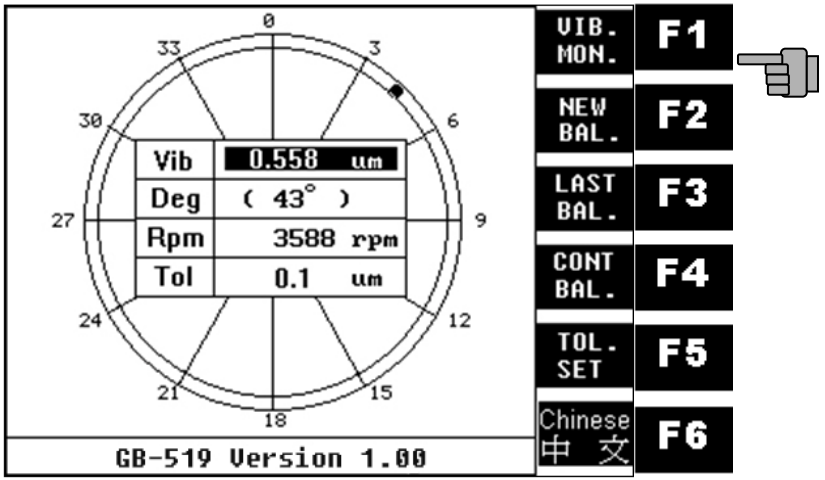
2. Signal in reading ...



3. When vibration exceed the set up initially limit, vibration will be inverted to display and beep happened.

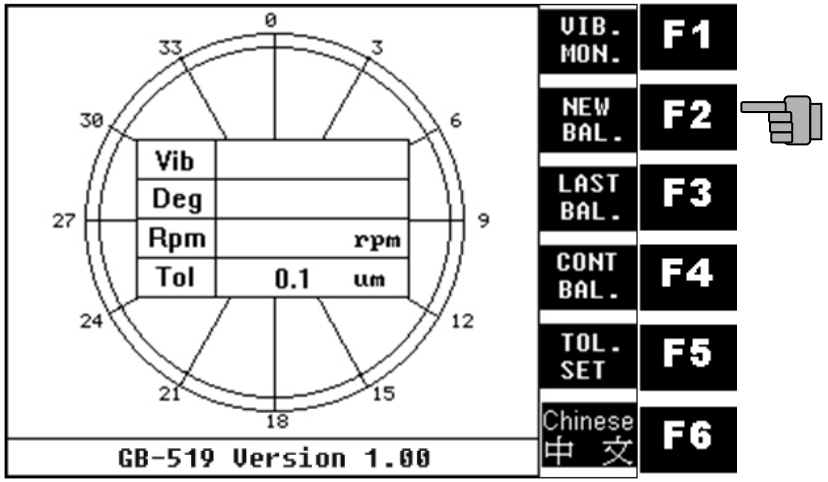


4. Real vibration would be displayed after 10 seconds. Vibration monitor is going on implementation again when wheel stop and start. Press F1 key, it may monitor at once.

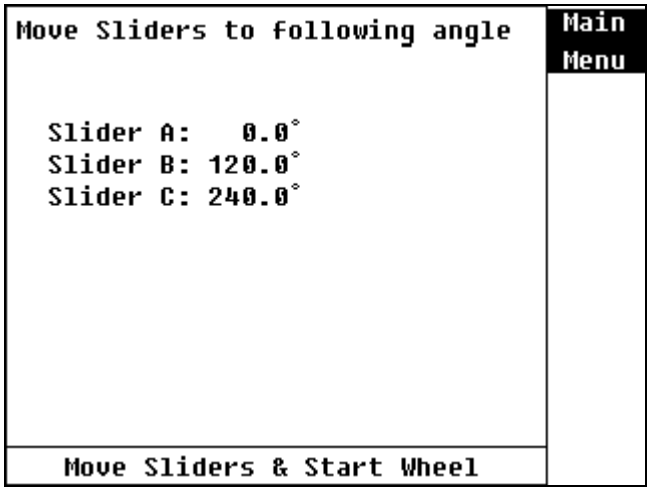


iv. New Balance:

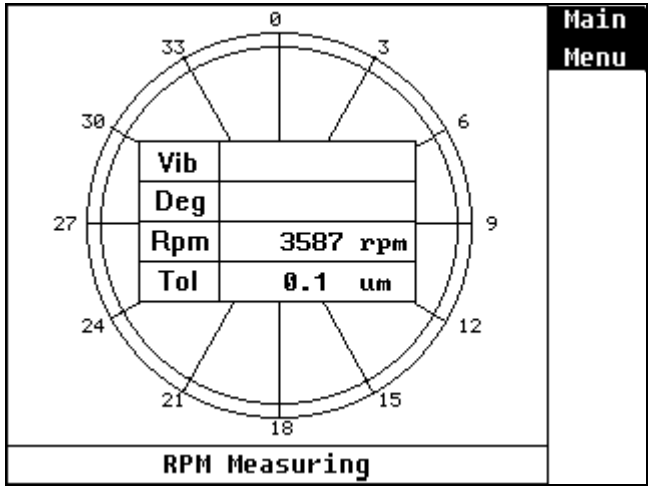
1. Press F2 Key to do a new balance.



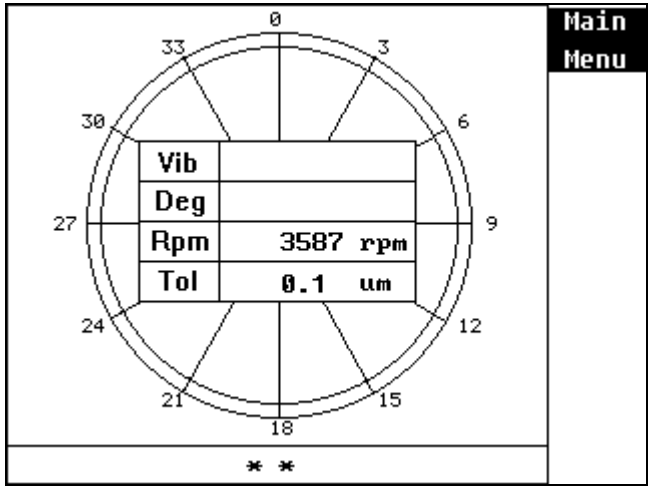
2. Move sliders to 0˚,120˚,240˚ position



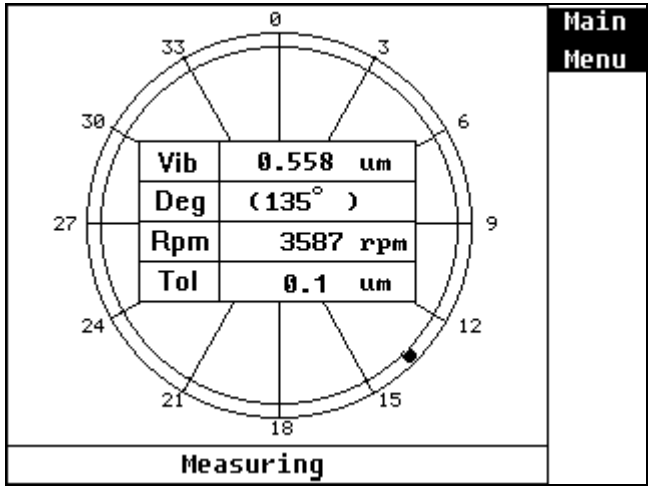
3. RPM in measuring …



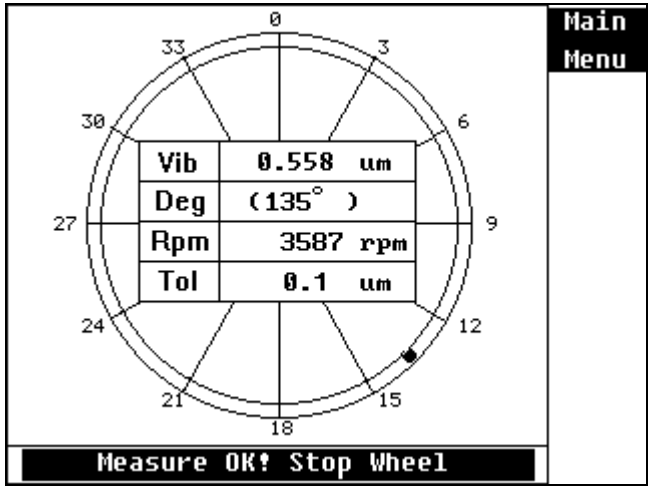
4. Read signal in the stable rpm.



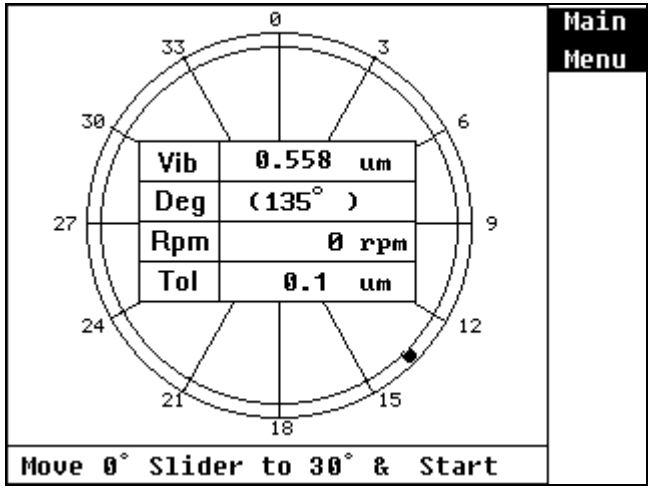
5. Signal in measuring …



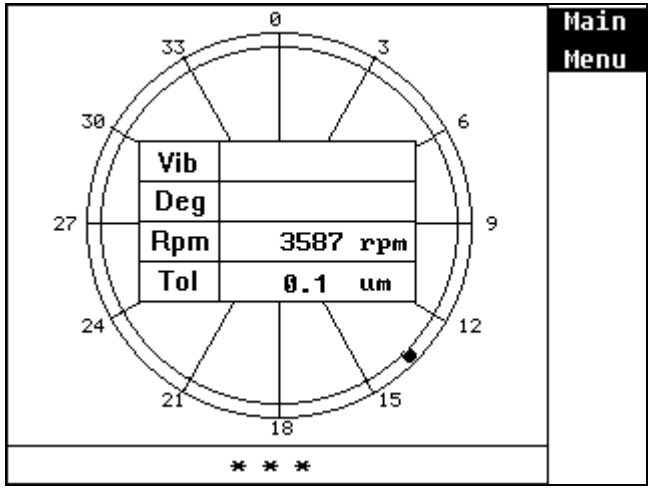
6. Stop wheel.



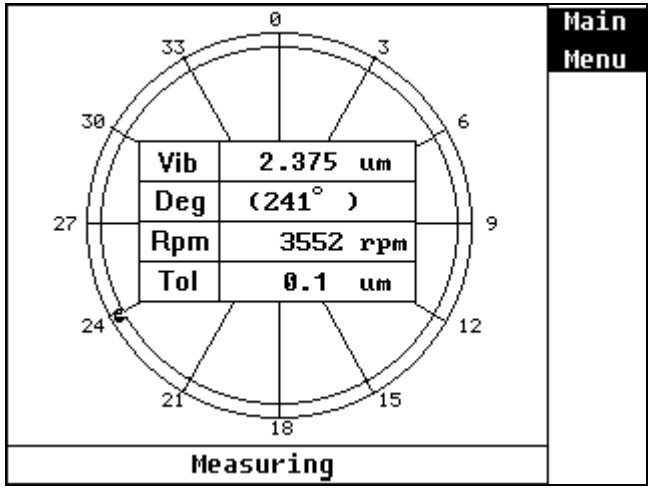
7. Move slider form 0˚ to 30˚ position, and start wheel.



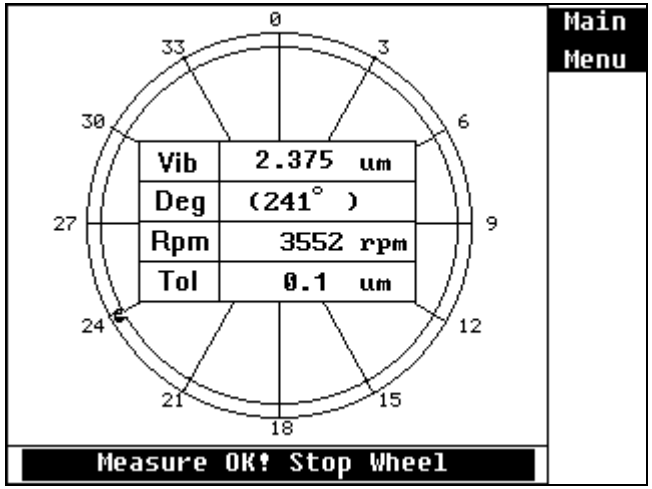
8. Signal in reading …



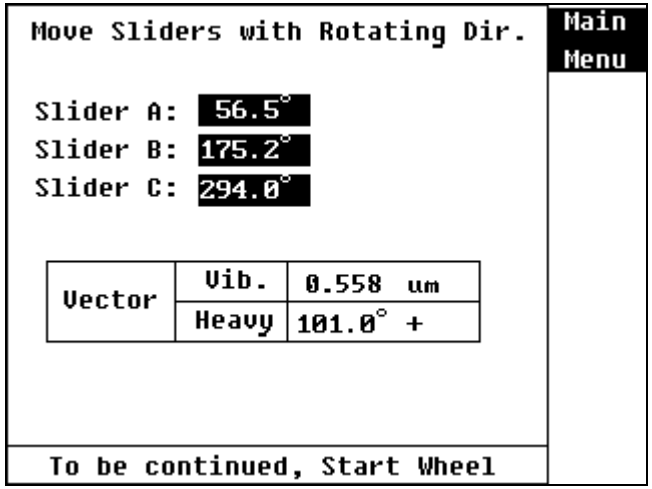
9. Signal in measuring …



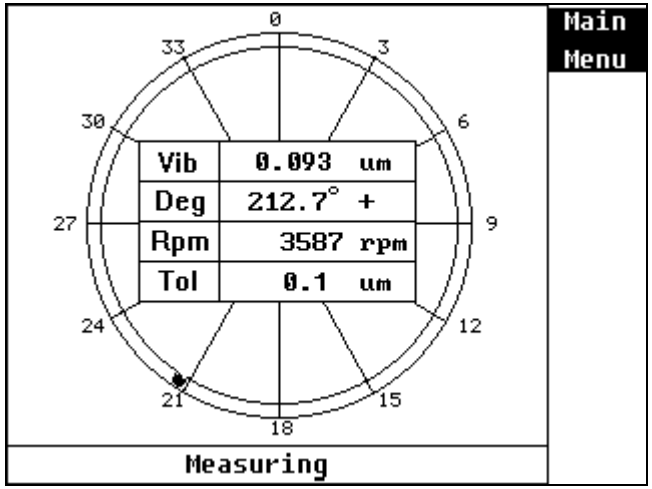
10. Stop wheel



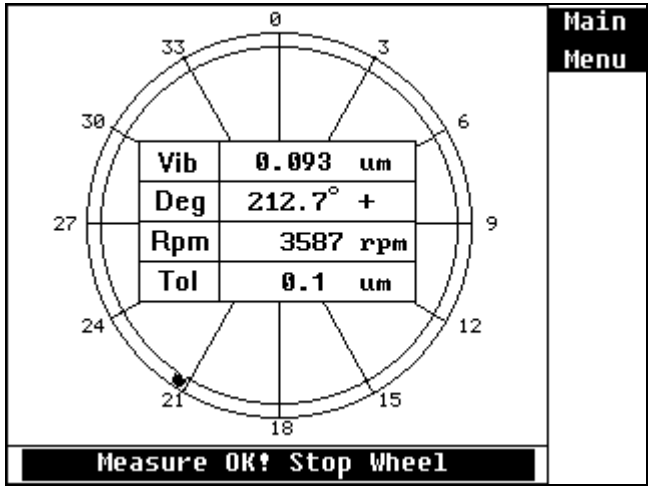
11. Move sliders to the real position according to the indication.



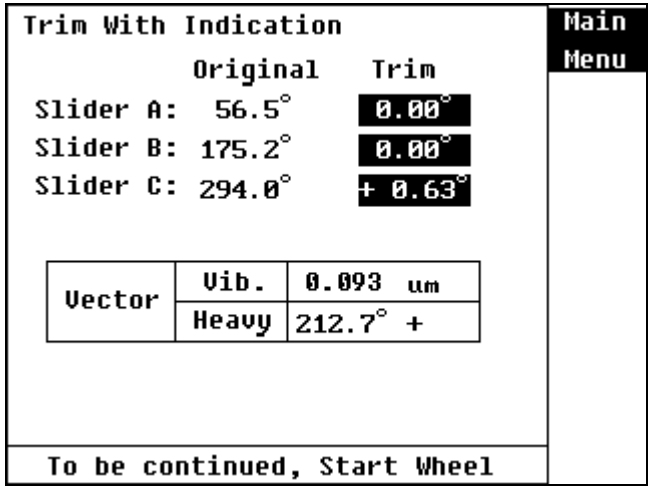
12. Signal in measuring …



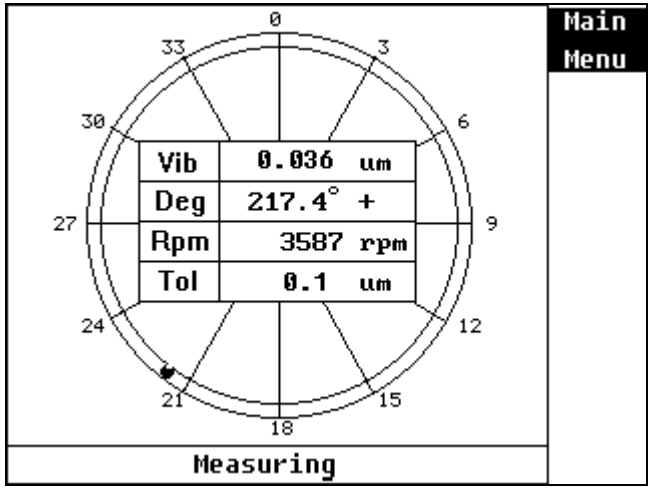
13. Stop wheel.



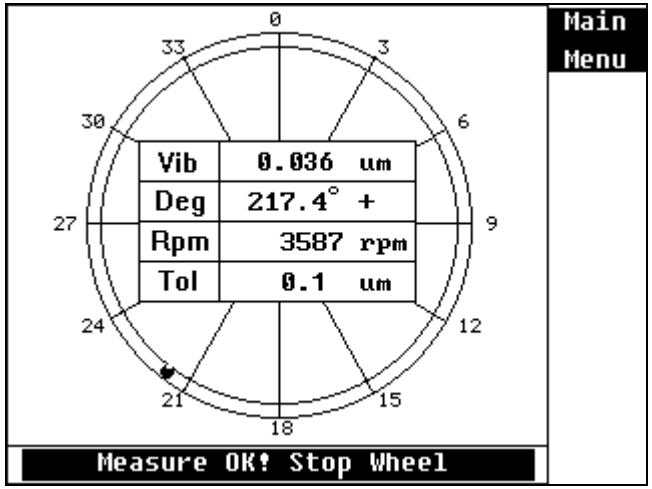
14. Trim sliders with indication.



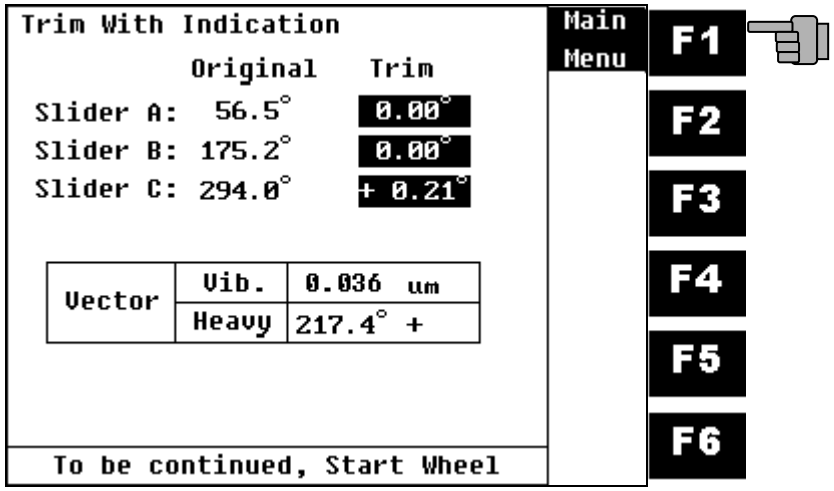
15. Signal in measuring …



16. Stop wheel.



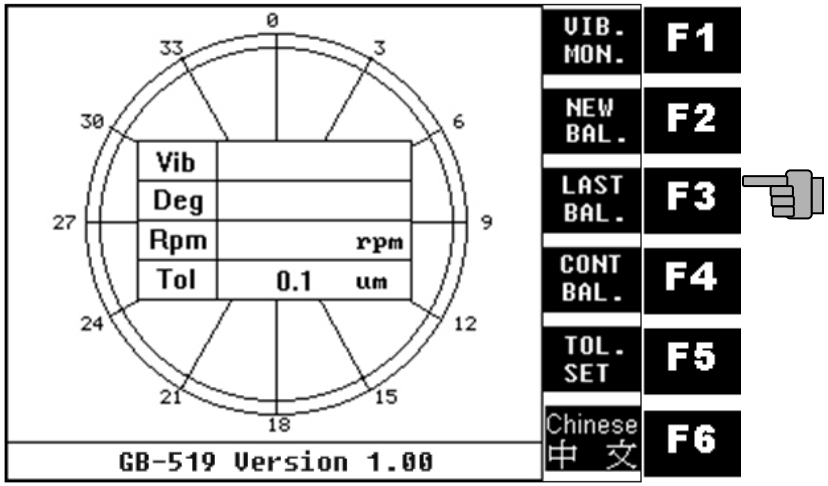
17. Trim sliders with indication to modify continuously,
Press F1 Key to return into the vibration monitoring mode.



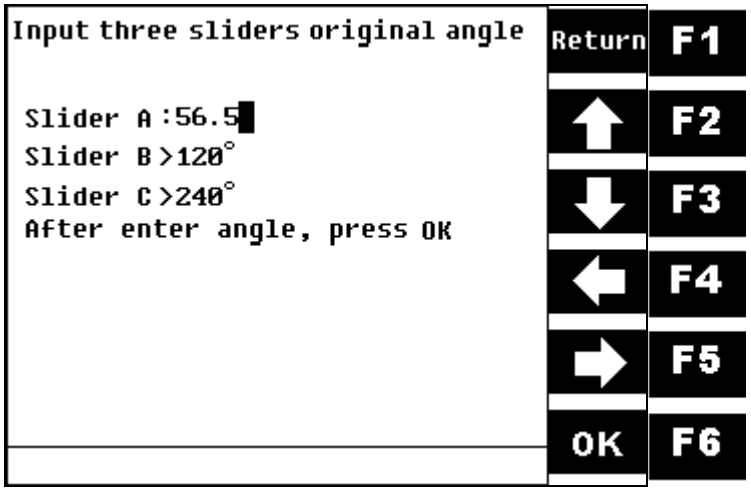
GB-519 Grinder Balancing & Monitoring

v. Last Balance:

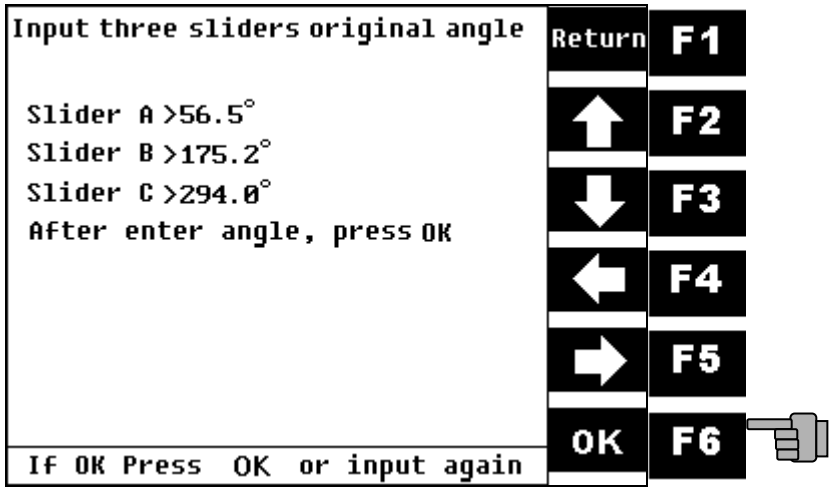
1. Press F3 Key to do the last static balance.



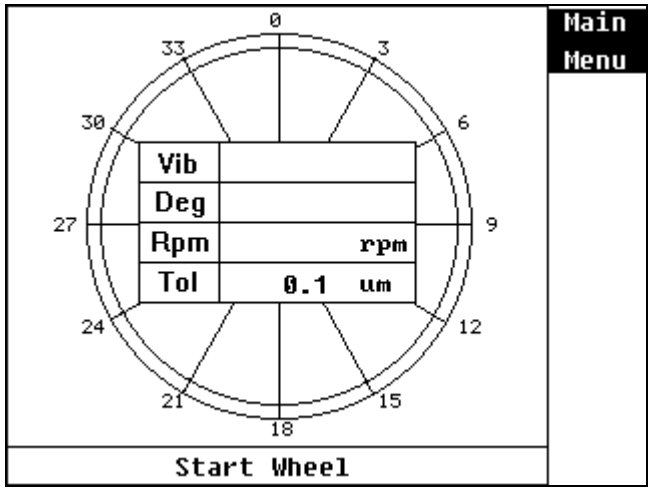
2. Input three sliders original angle with cursor key.(F2~F5)



3. Press F6 Key after finished.



4. Start wheel.



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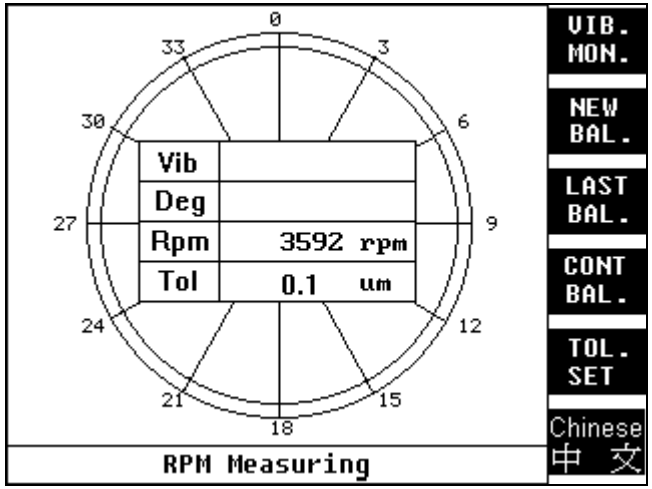
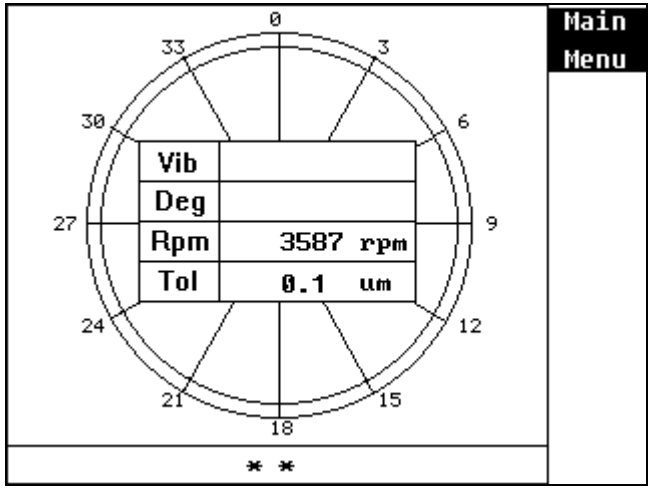
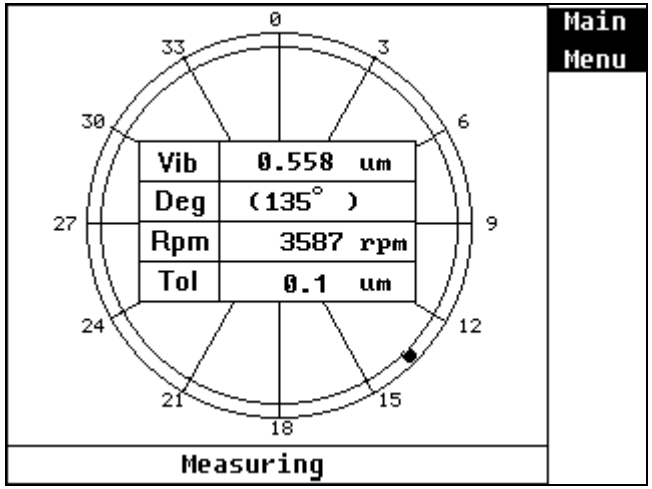
5. RPM in measuring …



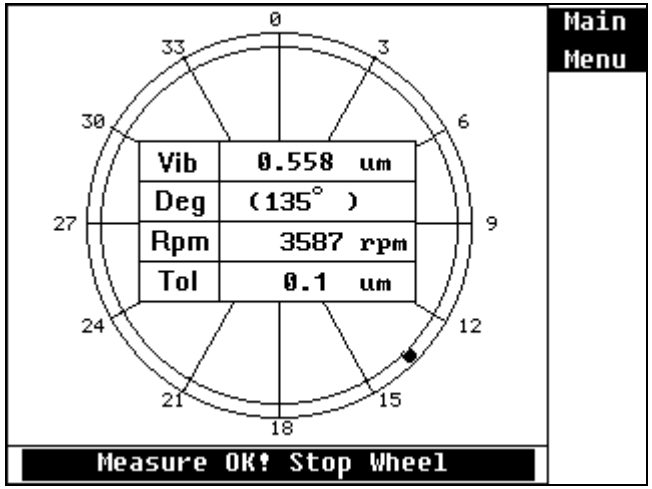
6. Signal in reading …



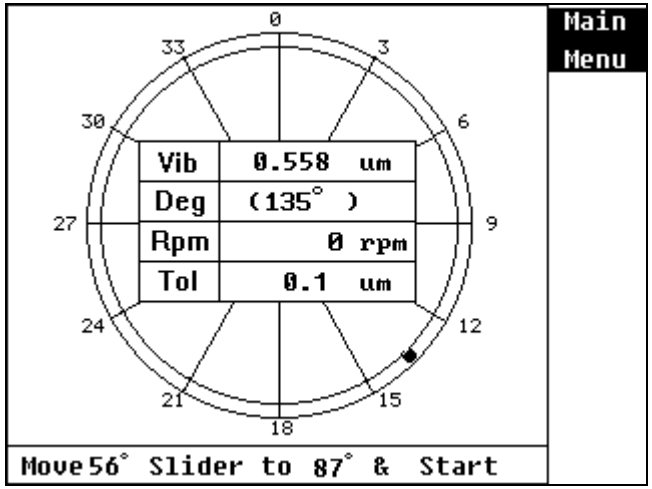
7. Signal in measuring …



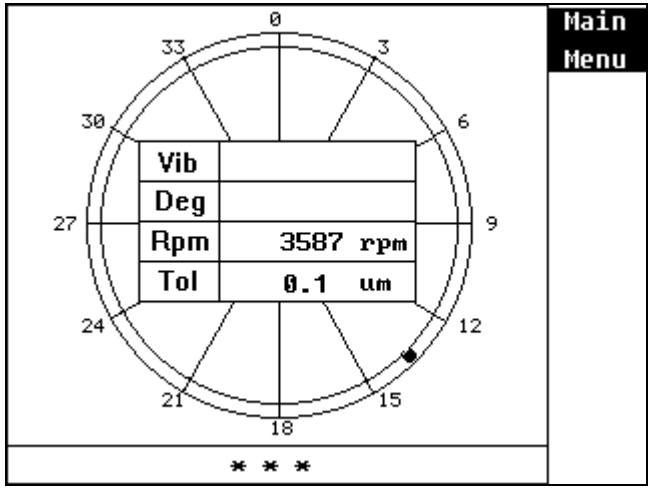
8. Stop wheel.



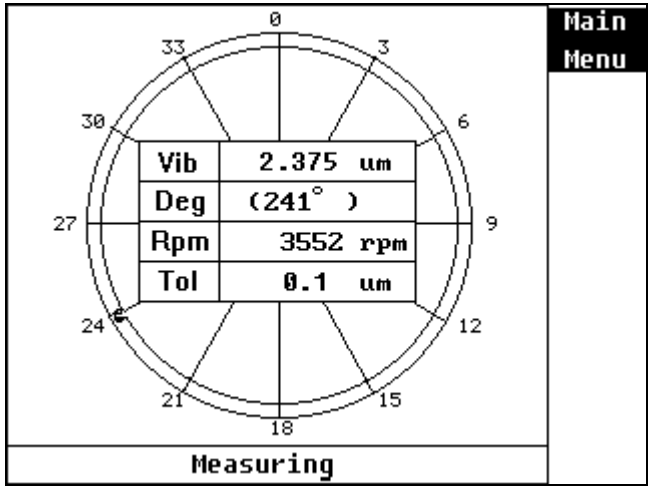
9. Move slider with indication, and start wheel.



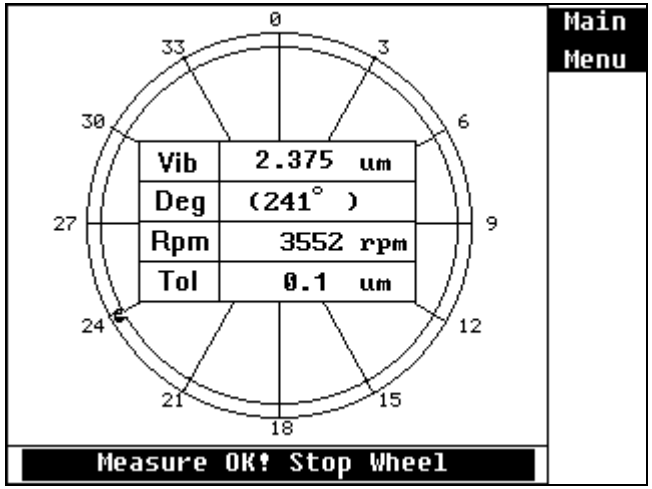
10. Signal in reading …



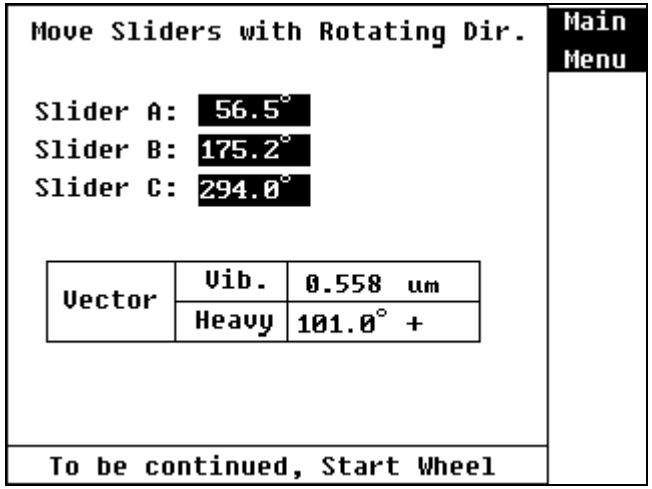
11. Signal in measuring …



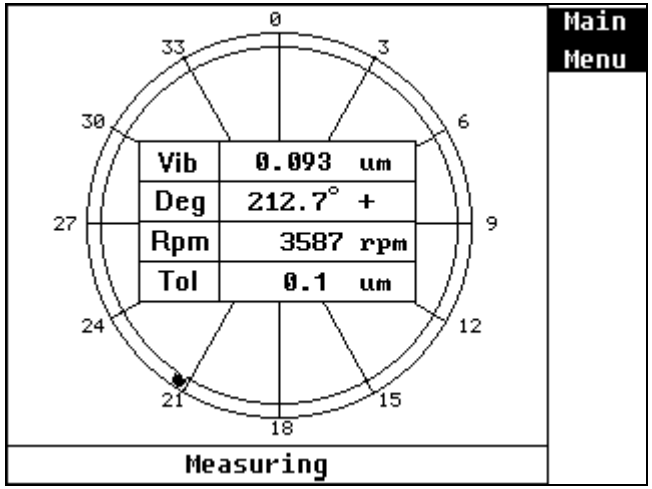
12. Stop wheel.



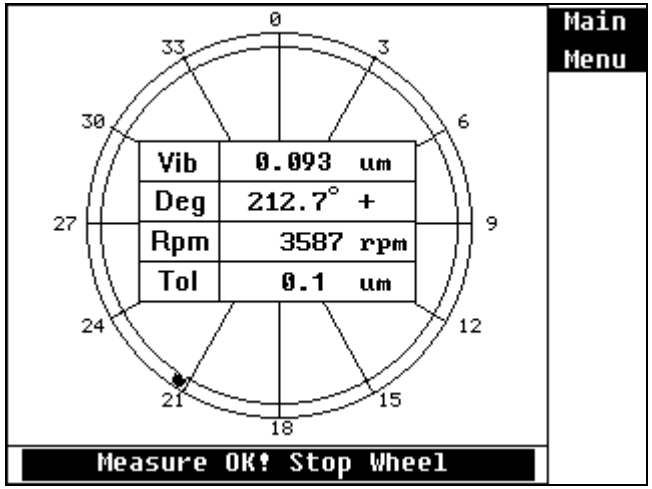
13. Move sliders with indication, and start wheel.



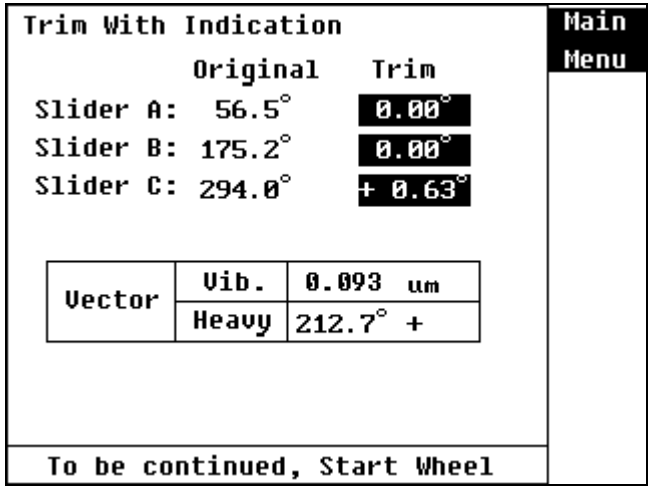
14. Signal in measuring …



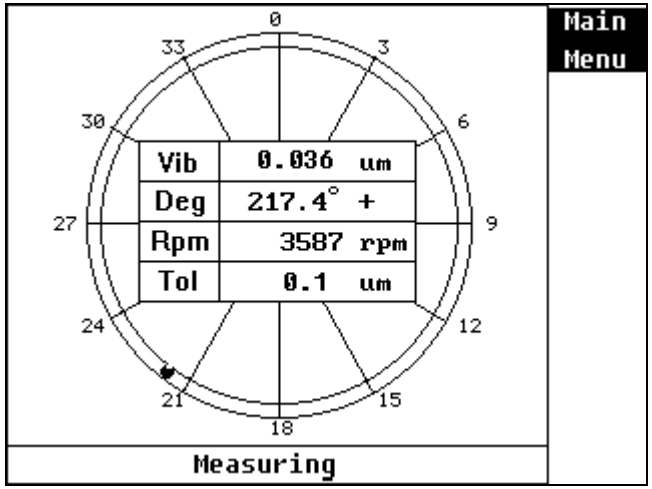
15. Stop wheel.



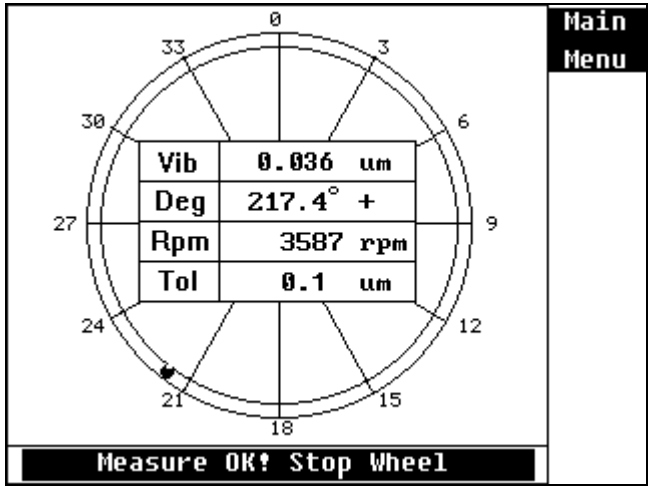
16. Trim sliders with indication.



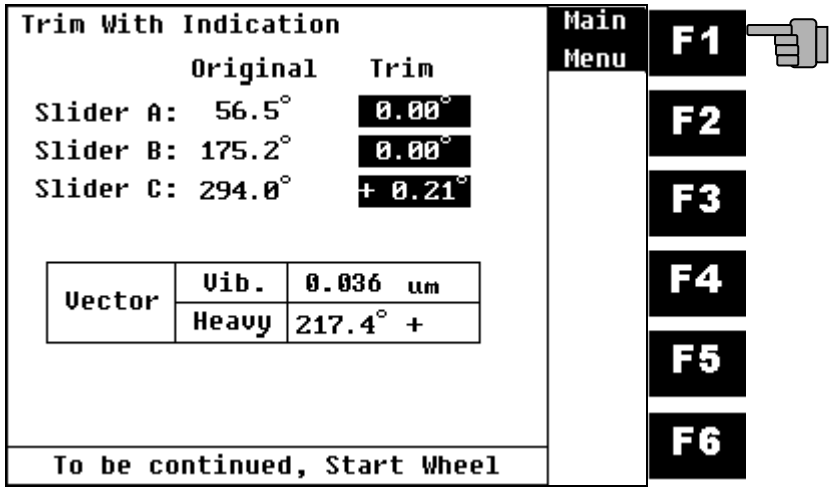
17. Signal in measuring …



18. Stop wheel.

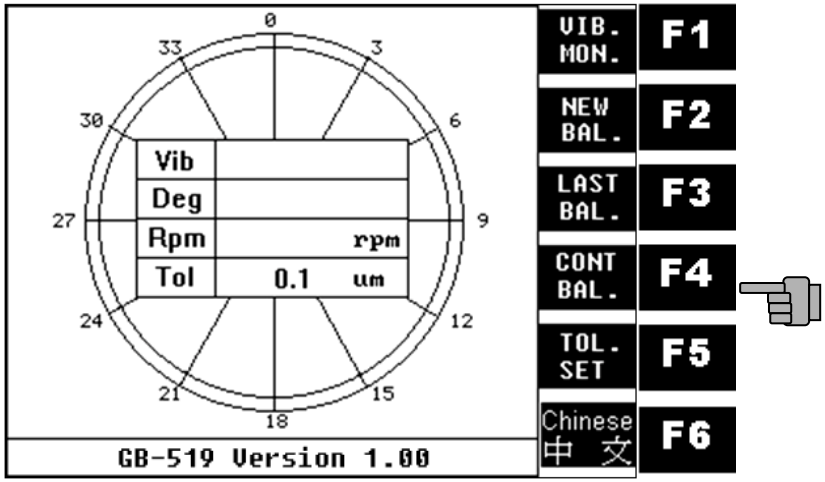


19. Trim sliders with indication to modify continuously. Press F1 Key to return into the vibration monitoring mode.

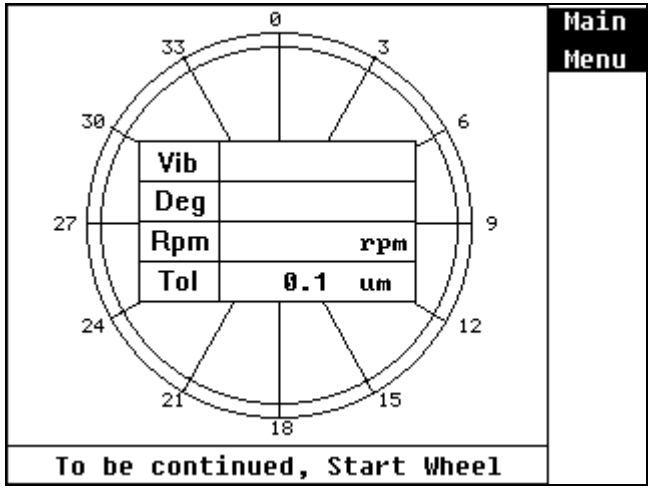


vi. Continue Balance:

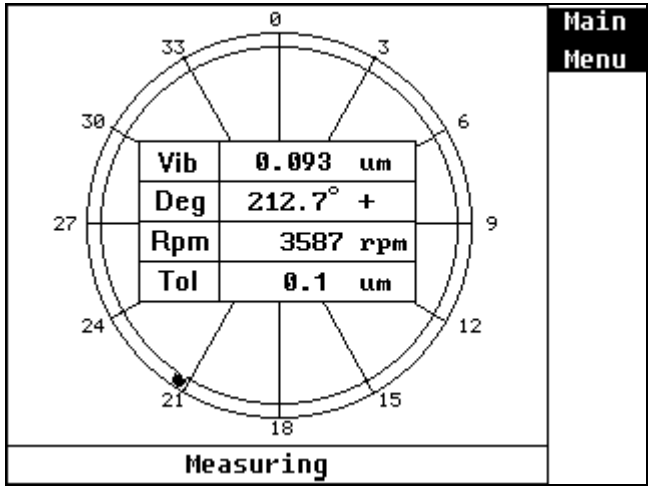
1. Press F4 Key to do the continue balance.



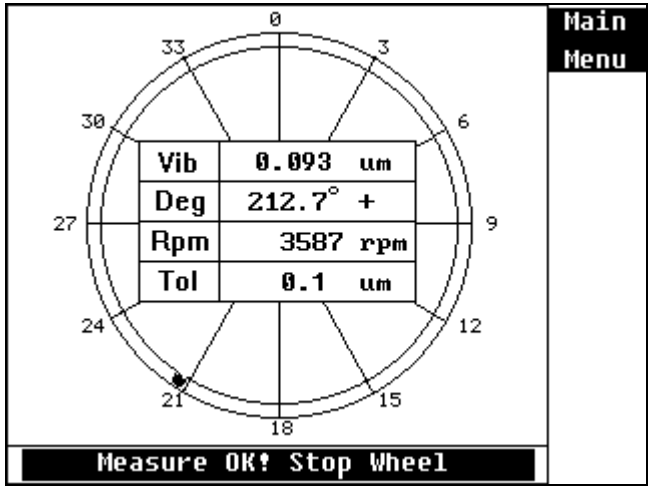
2. Start wheel.



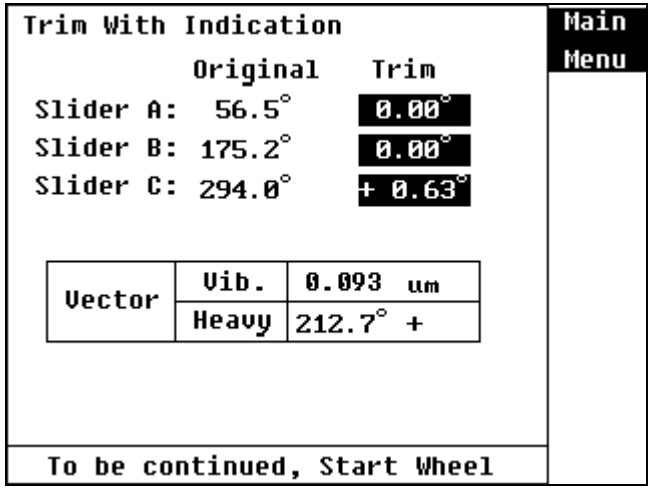
3. Signal in measuring …



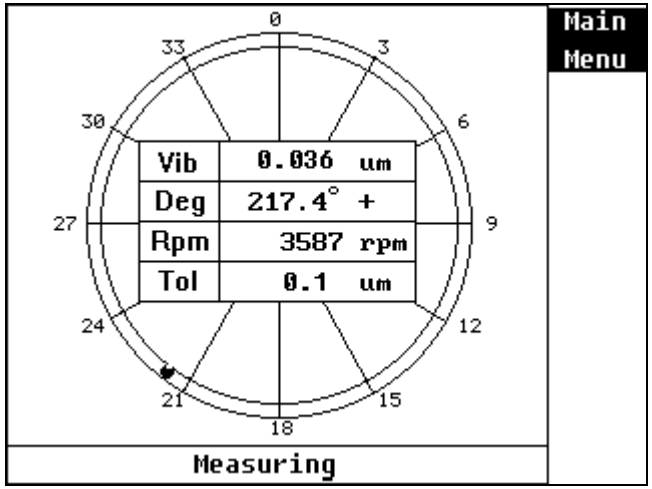
4. Stop wheel.



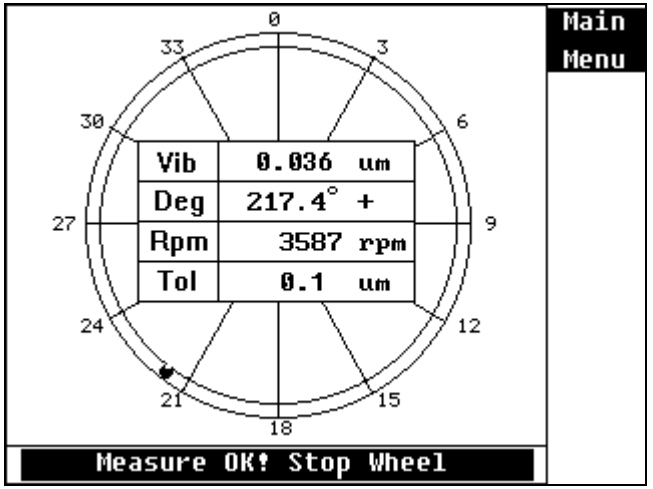
5. Trim sliders with indication.



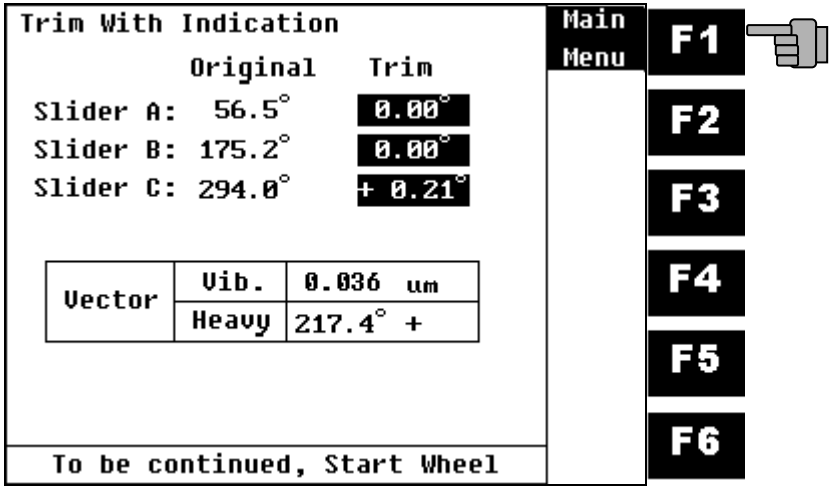
6. Signal in measuring …



7. Stop wheel.

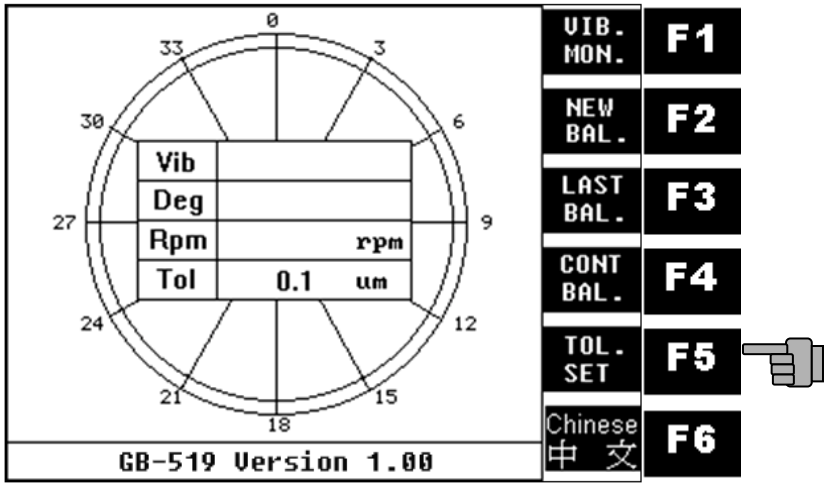


8. Trim sliders with indication to modify continuously. Press F1 Key to return into the vibration monitoring mode.

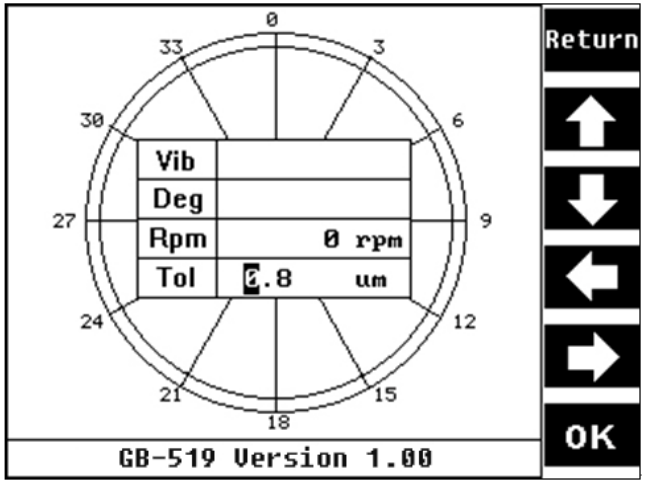


vii. Tolerance Limit Setup:

1. Press F5 key to do the tolerance limit setup.

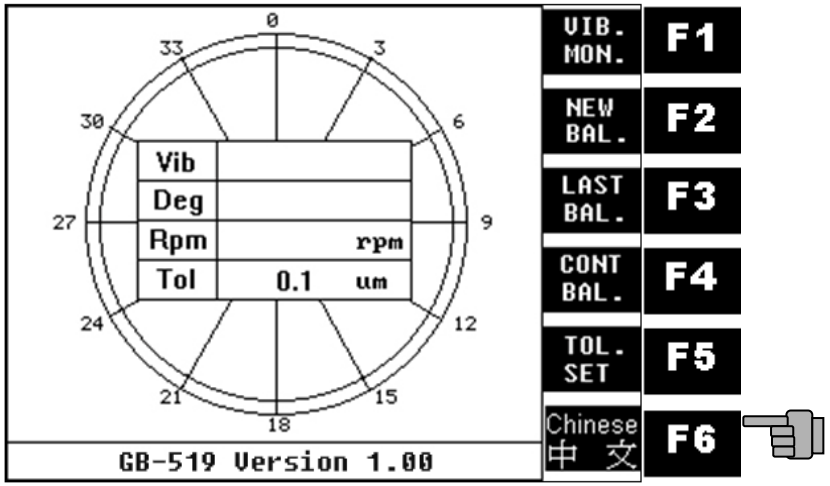


2. Press F2~F5 cursor key to enter into the tolerance limit value.
   Press F6 key to save the value.



viii. Language Switch

1. Press F6 key twice to change system language.



III. Troubleshooting:

Problem	Cause	Solution
No Display after turn on Power switch	Power not connected	Check power adaptor
	Adaptor is out of order	Contact vendor to change a new one
	Power voltage is mismatch	Check input voltage of adaptor
Can not enter into measuring Procedure	RPM sensor is not plug in	Plug in RPM sensor
	RPM sensor is not setup ok	Setup RPM sensor again
	RPM sensor is out of order	Contact vendor
Can not measure vibration data	Vibration sensor is not plug in	Plug in vibration sensor
	Vibration sensor is not installed on spindle	Place vibration sensor on spindle
	Vibration sensor is out of order	Contact vendor
	Grinder rpm is unstable	Check grinder controller

IV. Product Certificate:

Pan-Grand International

Product Certificate

Custom			
Address			
Tel		Fax	
Model	GB-519	S/N	
Vib. Sensor	DTE150-1A	Sensor S/N	
Purchase Date		Guarantee Date	

1. The certificate becomes effective with the purchase date and seal by agency.
2. The certificate offer 1 year's guarantee for the quality of instrument, if it is damaged under normal usage as well as no man-made issue.
3. Out of guarantee period, vendor can ask for repair cost when the man-made or weather reason.
4. If the certificate is missing or not intact, it will not reissue.
5. No seal no effective.
6. Please enclose this certificate when instrument send back for repairing.

Taiwan Factory:

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His Chih City,Taipei Hsien,Taiwan

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Memo:

GB-519 Grinder Balancing & Monitoring

Memo: