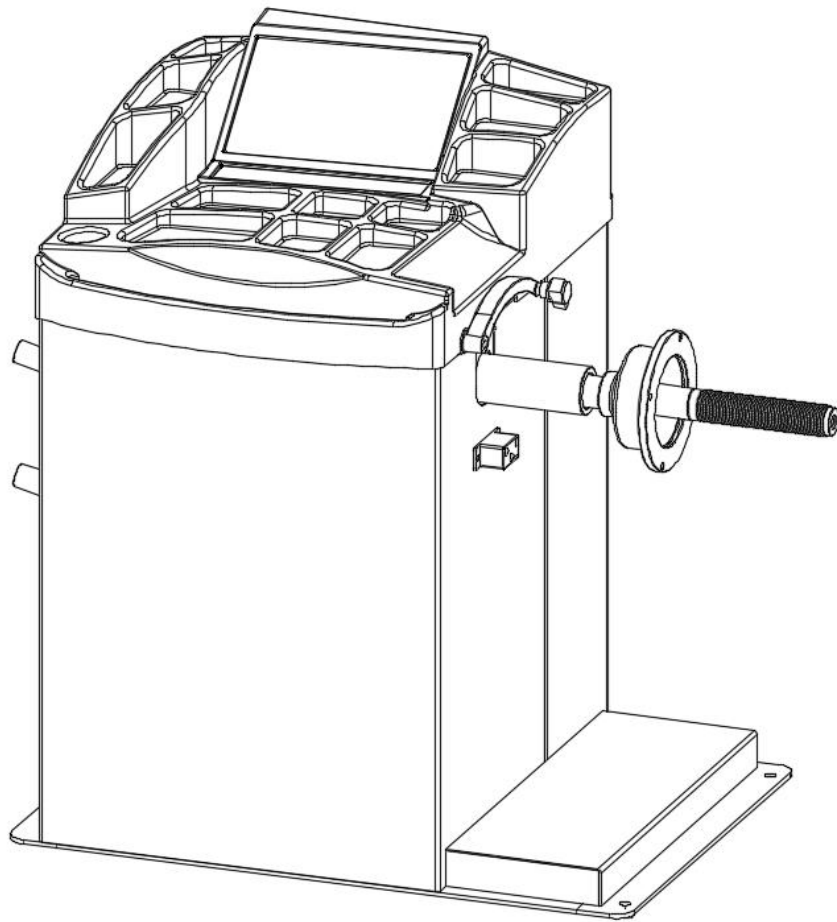


USE MANUAL



THREE-WINDOW MONITOR

1.WHEEL BALANCER INSTRUCITON

1.1 Summary

Out-of-balance of wheel will result in vibration, adhesion, run-out, vibration absorber broken, etc. To balance the wheel will eliminate vibration and minimum allowed toleration of the tire for the sake of disadvantage or damage.

1.2 Parameter

| | |
|---------------------|-----------------------|
| Max. Wheel weight | 132lbs |
| Motor power | 0.34HP |
| Voltage | 110V/1PH |
| Tolerate | 0.035 oz. |
| Rotation rate | 210 rpm |
| Rim diameter | 10" ~24" or 254~610mm |
| Rim width | 1.5" ~20" or 38~508mm |
| Balancing cycle | 8-10s |
| Noise | <70dB(A) |
| Net weight | 209 lbs |
| Overall size | 3.64×2.17×3.1(feet) |
| Working temperature | 0~50°C |

1.3 Warning

- 1.Read the Use Manual carefully before run the machine.
- 2.Keep the manual for future reading.
- 3.Avoid take apart or replace the spare parts of the machine. Otherwise, it can not be operated properly. Please contact us if you need the technical service.
- 4.High pressure air compressor is prohibited using for machine cleaning.
- 5.Clean the plastic plate or key board by pure alcohol.
- 6.Make sure the wheel locks firmly and safety on the main axle before balancing operation.
7. Wear tight suit when run the machine to avoid accident during the operation. Untrained personnel mustn't operate the machine.
8. Leave enough free space the for the machine to make it work properly.

2.Installation

2.1 Installation of Wheel Balancer

- 2.1.1 Unpack and check if any spare parts is damaged or lost. Don't use it if you find the problem and contact the supplier.
- 2.1.2The machine must be placed on the firmed cement ground or similar. If not, it brings measurement error.
- 2.1.3 Leave 19.69" space around the machine for operation.
- 2.1.4 Fix the machine by installing screw hole at the bottom.

2.2 Installation of shaft

- 2.2.1 Use M10*160 threaded bolt (supplied kits) to fix the shaft to main shaft. Tight it up. Refer to photo.

Waring: It is helpful if you hang a wheel on during the installation of shaft. By holding the

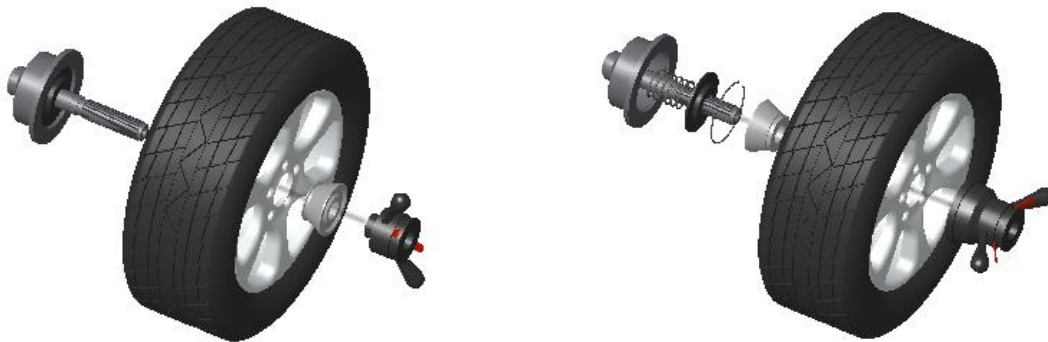
wheel rim, the installation is easily. The balancing shaft must be tightened seriously in order to have a accurate detected result.



2.2 Installation of wheel

Clean the wheel out of dust , remove the attached gram weight. Check tire pressure meet the specified value. Check rim contacts and installation hole is in normal condition.

By the different shape of wheel, you can use the two installation method as followings:



Main shaft-wheel(rim contacts inside)-
fit cone(small surface inside)-Quick nut

Main shaft-Spring(spring-pressure capt-jump
spring fixed at manufacturer)-fit cone(big surface
inside)-wheel -Quick nut

Waring: Don't slide the tire wheel on the shaft to avoid scratch when mount or demount it.

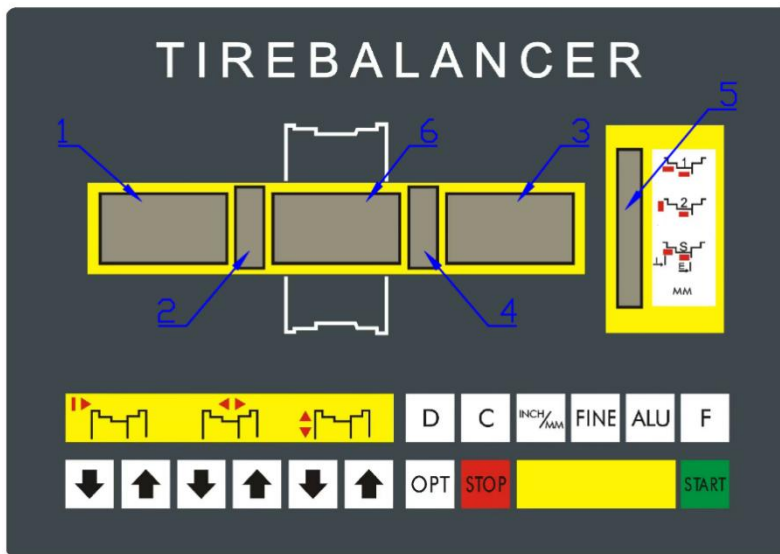
2.3 Electrical Connection

2.2.1 Choose the volts based on technical parameters, but to install a Auto Air Switch as well.

2.2.2 Use the switch with ground protection. The color of ground wire color is yellow and green. Wires must be firm grounded.

3. Instruction of monitor and mode

3.1.1 Function of monitor

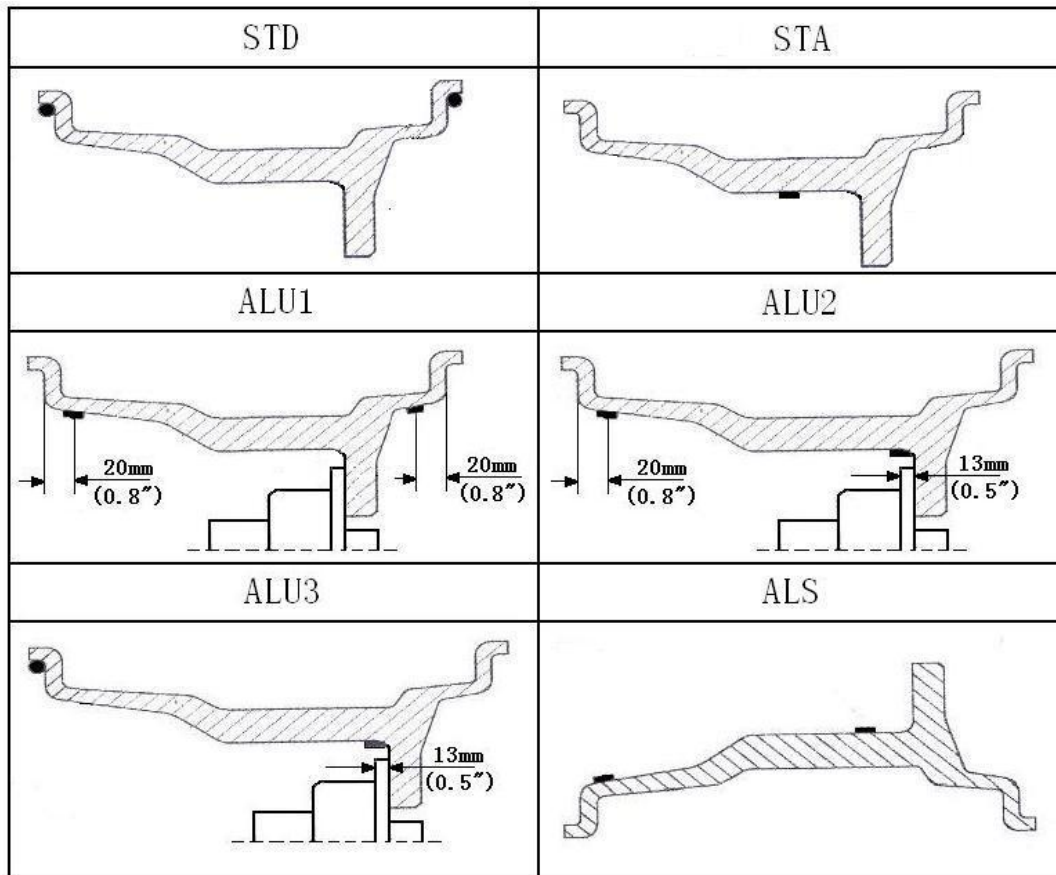


- 1.Number display of inside unbalanced
- 2.Location display of inside unbalanced
- 3.Number display of outside unbalanced
- 4.Number display of outside unbalanced
5. Correction mode
6. Display of wheel width

3.2.1 Function of key button

| | | | | | |
|--|-----------------------|--|------------------------------|--|--|
| | Distance set a- a+ | | Rim width b- b+ | | Rim diameter d- d+ |
| | Static mode | | Reset | | |
| | Select 'ALU' | | Optimization of unbalance | | Unbalance display pitch and threshold |
| | Start | | Stop/Cancel | | Shift INCH/MILLIMETER |

3.3.1 Balanced mode



4. Indication and use of Wheel Balancer

4.1 DYN (Standard mode/default mode)

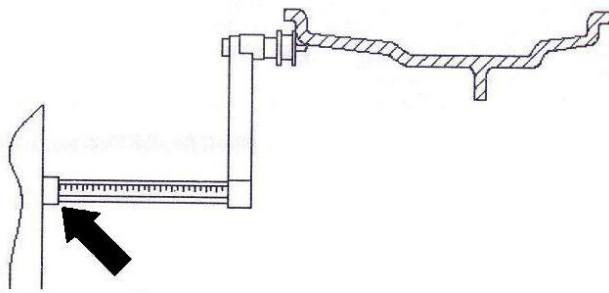
4.1.1. Clean the wheel. Take off balance weight . Check tire pressure. Select installation mode in accordance with rim specification.

Warning: Put the cone in the place, Make sure quick nut clean and complete. Lock the quick nut.

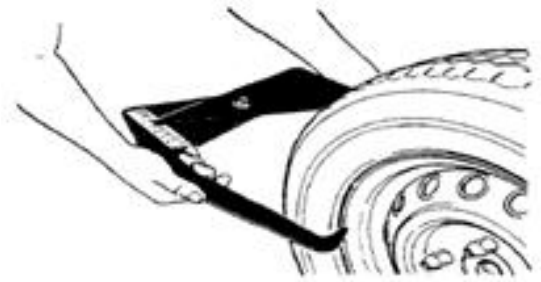
4.1.2. Start the machine, select the model according to the rim.

4.1.3. Enter the correct a, b, c.

1. Pull out the measurement, measurement head is against the rim edge. Refer to F 4.1. Distance unit is millimeter.
2. Wait for a short time until hear the warning tone. Put the measurement back to its position. The machine catch a distance away to a and rim diameter d. Button **【D+】** or **【D-】** to modify diameter d.
3. Use a wheel caliper to measure wheel width b(refer to F4.2), or read the width on the surface of tire. The unit of wheel width can be set by inch or millimeter. .
4. Button **【B+】** or **【B-】** to modify the width.



F4.1(data a)



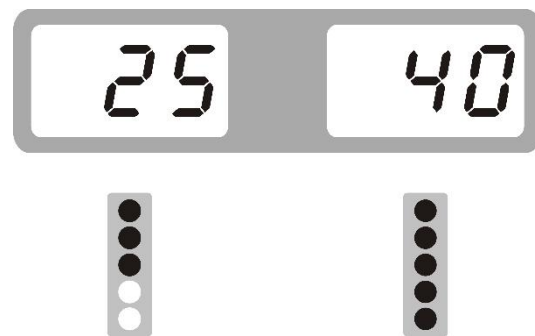
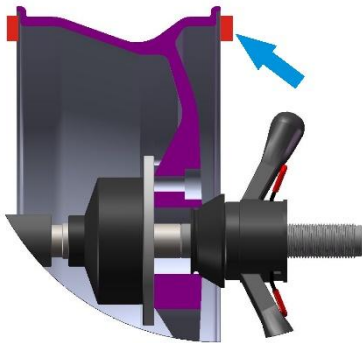
F4.2(data b)

4.1.4.The wheel rim starts rotation by button **【START】**。

4.1.5. It goes up to the operation speed after several seconds and measure the unbalanced data.

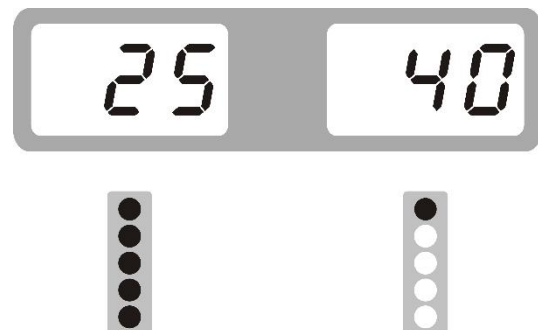
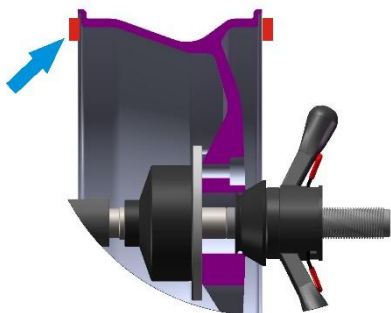
When the wheel stops, unbalanced data will display at window 1 and 3. Button **【FINE】** will display accurate unbalanced data.

4.1.6. Keep rotating the wheel slowly until all lights turn on of LED at right. Fix balance weight right above(12 o'clock direction), refer to F 4.3.



F4.3

4.1.7.Keep rotating the wheel slowly until all lights turn on of LED at left. Fix balance weight right above(12 o'clock direction), refer to F 4.4.



F4.4

4.1.8. Button **【START】** again after finish the wheel weight. Once again to balance the wheel . You have done the work if the window display 00 00, refer to F4.5.



F4.5

4.2 ALU Mode (ALU-1、ALU-2、ALU-3, they are same but the position of wheel weight is different)

4.2.1. Enter the correct a,b,c.

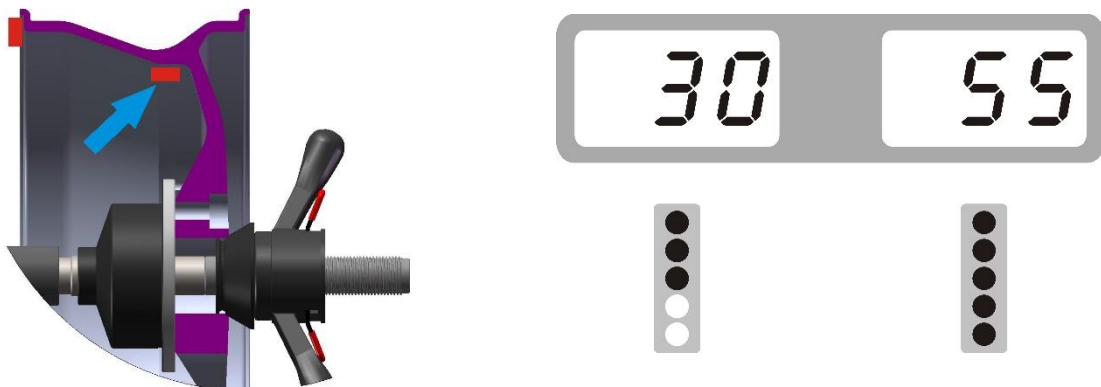
4.2.2. Select the mode by button **【ALU】** until its corresponding light of LED turn on.

4.2.3. Starts rotation by button **【START】**

4.2.4. It goes up to the operation speed after several seconds and measure the unbalanced data. When the wheel stops, unbalanced data will display at window 1 and 3. Button **【FINE】** will display accurate unbalanced data.

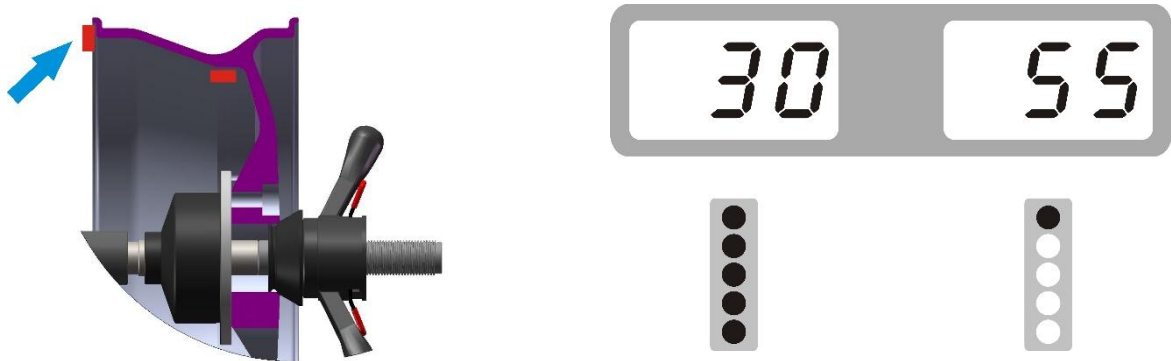
4.2.5 Keep rotating the wheel slowly until all lights turn on of LED at right. Fix balance weight right blow (6 o'clock direction), refer to F 4.6. (Laser position light turns on if equip it)

Waring: In a certain mode, laser position light can be activated.



F4.6

4.2.6 Keep rotating the wheel slowly until all lights turn on of LED at left. Fix balance weight right above (12 o'clock direction), refer to F 4.7.



F4.7

4.2.7. Button **【START】** again after finish the wheel weight. Once again to balance the wheel . You have done the work if the window display 00 00, refer to F4.8.



F4.8

4.3 ALS Mode (Smart Mode for Aluminum Alloy Rim)

Smart ALS mode is set up for the aluminum alloy rim with the machine. In contrast with mode for aluminum ally rim(ALU1-ALU3), ALS can locate wheel gram wight as desired. It is a good option for special aluminum alloy rim.

ALS user-defined position of balance weight both inside and outside.

ALS catch the data by distance or diameter. Caliper is not available.

ALS catch the data of distance and diameter in two times. di1 (distance 1)and da1 (diameter 1) is regard as inside, di2(distance 2) and da2(diameter 2) is regard as outside. When finish it, please check or modify by hand.

Please follow the steps:

4.3.1 Input di1、 da1; di2、 da2。 (automatic input if equip automatic measurement , refer to 4.3.14.)

4.3.2.Pull the measurement to the inside of rim where is to attach the balance weight , refer to F4.9.

4.3.3. Read the length , distance unit is millimeter.

4.3.4. Adjust **【A+】** or **【A-】**, display di1 (inside distance of rim), input measured length. It will retain the di1 value and go back if none data input in 2 seconds.

4.3.5. Adjust **【D+】** or **【D-】** , display da1 (inside diameter of rim), input measured length(refer to note for catch its data).It will retain the current value and go back if none data input in 2 seconds.

4.3.6. Pull the measurement to the outside of rim where is to attach the balance weight , refer to F4.10. Read the length , distance unit is millimeter.

4.3.7. Adjust **【F】** + **【A+】** or **【F】** + **【A-】** , display di2 (outside distance of rim) , input current data.It

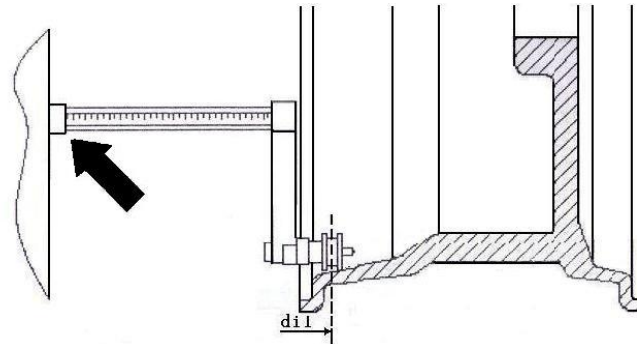
will retain the current value and go back if none data input in 2 seconds.

4.3.8. Adjust **【F】+【D+】** or **【F】+【D-】**, display **da2** (outside diameter of rim), input current data (refer to note for catch its data). It will retain the current value and go back if none data input in 2 seconds.

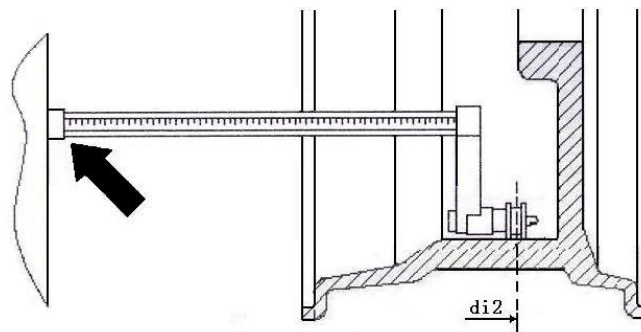
Note: There are two methods to catch the data for outside diameter of rim.

Method 1: Measure the rim diameter for both inside (da1) and outside (da2) by hand with a ruler.

Method 2: Read the data on the rim, use the data to reduce 1 inch (25mm) for inside and 2 inches (50mm) for outside.



F4.9 Measure inside rim distance by ALS mode

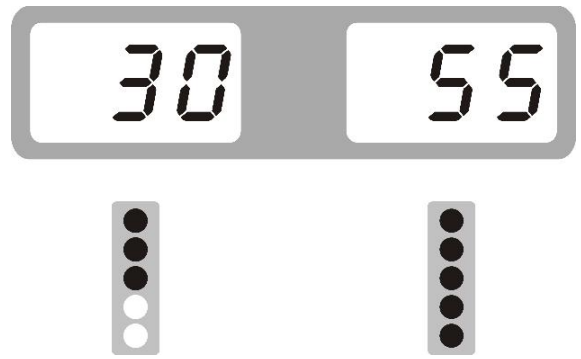
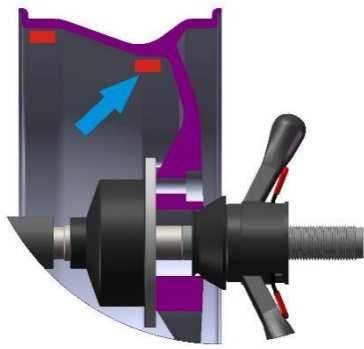


F4.10 Measure outside rim distance by ALS mode

4.3.9. Wheel starts rotate by button **【START】**

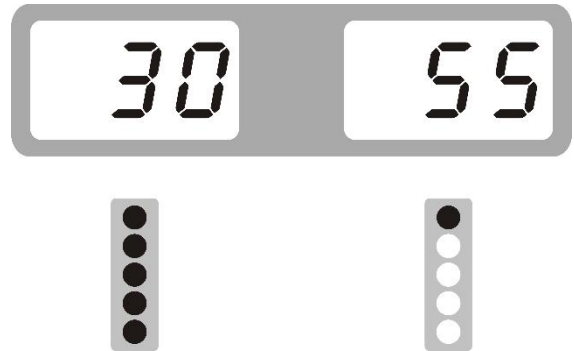
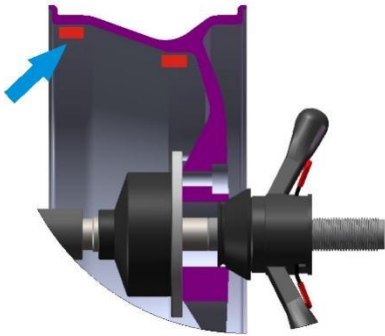
4.3.10. It goes up to the operation speed after several seconds and measure the unbalanced data. When the wheel stops, unbalanced data will display at window 1 and 3. Button **【FINE】** will display accurate unbalanced data.

4.3.11. Keep rotating the wheel slowly until all lights turn on of LED. Fix balance weight blow (6 o'clock direction), refer to F 4.11.



F4.11

4.3.12 Keep rotating the wheel slowly until all lights turn on of LED. Fix balance weight right blow(6 o'clock direction), refer to F 4.12.



F4.8

4.3.13.Button **【START】** again after finish the wheel weight. Once again to balance the wheel . You have done the work if the window display 00 00, refer to F4.13.



F4.13

4.3.14. Use the measurement catch di1、da1; di2、da2 automatically.

1. Select ALS by **【ALU】**
2. Open Auto catch by **【C】**, the screen display Acq on, refer to F4.14.

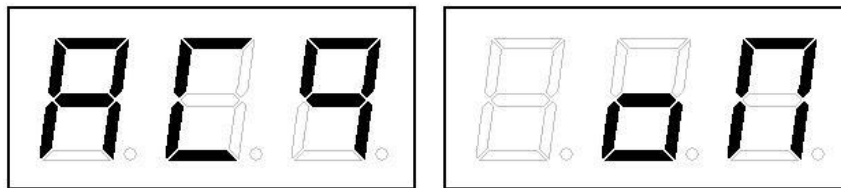
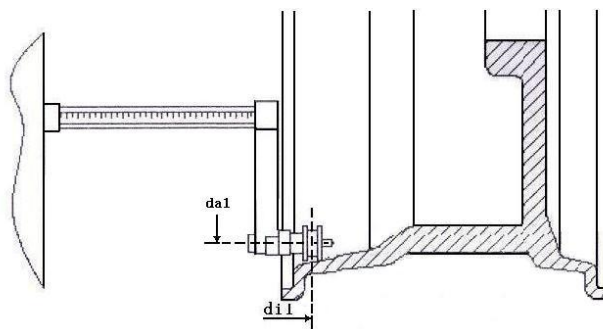
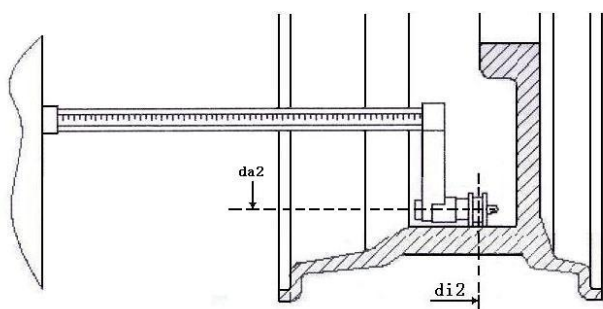


图 F4.1 Open the Auto catch

3. Pull out the measurement for distance and diameter against the inside rim, refer to F 4.15. During the operation, screen will display the value of distance and diameter.
4. When you hear a long and a short voice, you will return the distance/diameter caliper back and the work is done. If you don't do that, machine will measure it again.
- 5 Pull out the measurement for distance and diameter against the outside rim, refer to F 4.16. During the operation, screen will display the value of distance and diameter. When you hear a long and twice short voice, you will return the distance/diameter caliper back and the work is done. If you don't do that, machine will measure it again.
5. After finish the data catch, please check or modify $di1/di2$ (inside/outside distance) and $da1/da2$ (inside /outside diameter) by hand.



F4.15 inside data catch by mode ALS



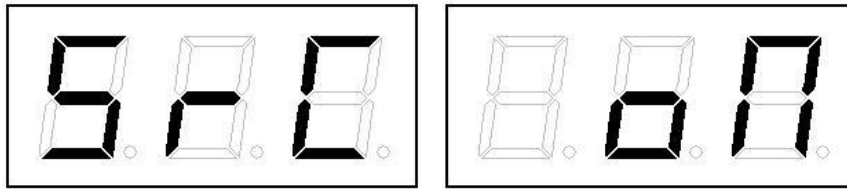
F4.16 outside data catch by mode ALS

Repeat 4.3.9—4.3.13 to finish the balancing.

4.3.15 Search for out-off-balance

This step is to find out the location of balance weight and attach it. Follow the steps.

1. Open the Auto search by button **[C]**, display Src on, refer to F4.17.



F4.17 Open the Auto Search

2. Read the out-of-balance gram value in the window at left before to attach the balance weight to the measurement head, refer to F 4.18.

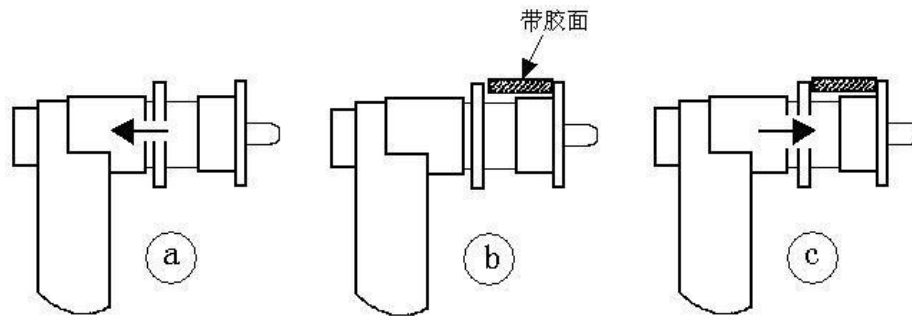
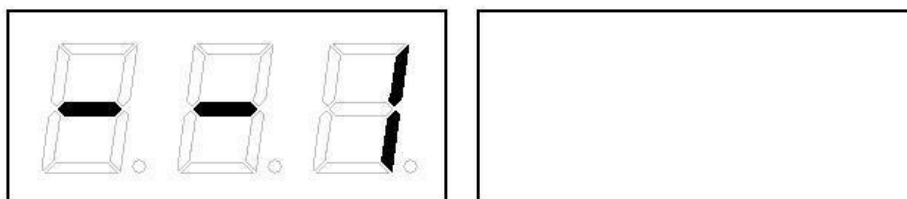
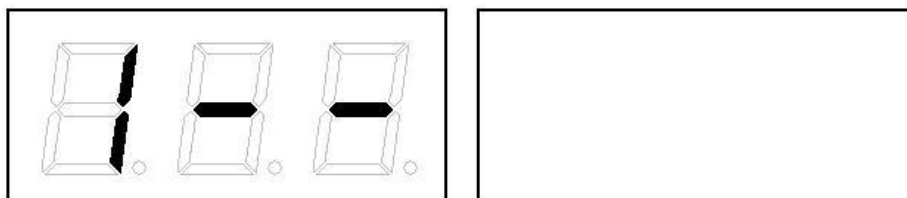


图 F4.18 Use the distance caliper to attach the balance weight

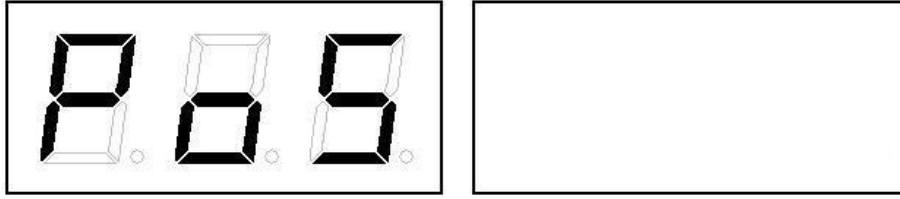
3. Rotate to the out-of-balance point of inside rim where all lights turn on. Use foot pedal braking or magnetic locking device(equipped) to keep it still.
4. Pull out the distance caliper slowly. You will hear a continuous scream of buzzer when you find the out-of-balance point. During the procedure of pulling distance caliper, window will display the direction of position for your reference. Refer to F4.19, F4.20, F4.21.
5. Hold the distance caliper its position, rotate the ruler until the balance weight is attached to the rim. The meeting-point of distance caliper with rim is at 12 o'clock and 6 o'clock.
6. Push the distance caliper back to zero, start searching for out-of-balance on outside rim.
7. Release the wheel, repeat steps from 2 to 6 in order to match out-of-balance point.
8. Rotate the wheel and test the result.



F4.19 Pull the distance caliper right



F4.20 Pull the distance caliper left



F4.21 Distance caliper arrived its position

Attention:

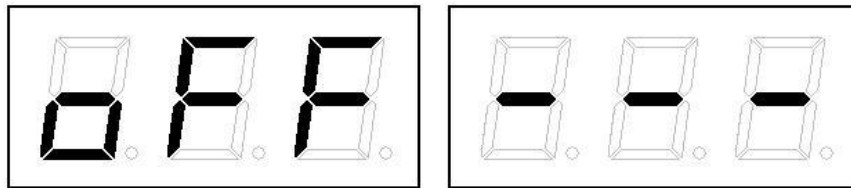
- a. If you test the wheel again, the step of data catch can be skipped.
- b. If you do the measure by other mode and later to select the ALS, machine use the previous rim data di1/da1 and di2/da2 to balance the wheel.

4.4 OPT

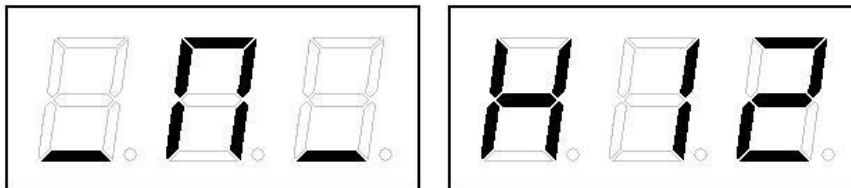
The purpose of OPT is to offset the problem of unbalanced tire and unbalanced rim so as to less quantity balance weight used. It is suitable for wheel has serious unbalanced problem.

4.4.1. Open OPT by button **【F】** + **【OPT】**.

4.4.2 If the static unbalance of the tire is less than 1.06 oz., the machine screen will display the information shown in figure F4.21 for 2 seconds, and the buzzer will sound 3 short beeps. Then exit OPT mode automatically. If the static unbalance of the tire is greater than or equal to 1.06 oz., the machine screen will display the information shown in figure F4.22.



F4.21 OPT is not available



F4.22 Adjust the air nozzle to 12 o'clock

4.4.3. Turn the rim air nozzle to 12 o'clock and mark the tire at the air nozzle. Press the OPT to confirm the position, refer to F4.23.

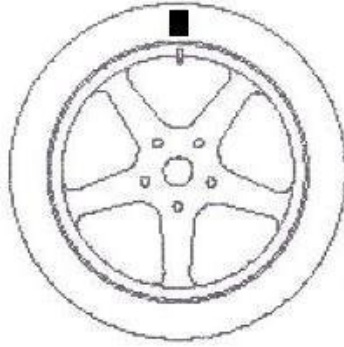
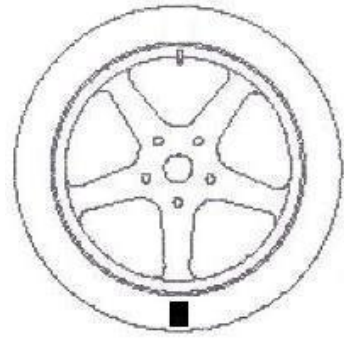


图 F4.23

4.4.4. Start to measure by button **【START】** or close the protector.

4.4.5. Remove the tire from the balance shaft and separate the tire from the rim. Reinstall the tire so that the position marked on the tire is rotated and installed at the relative position of the rim air nozzle, refer to F4.24.



F4.24 Rotate wheel 180° to make it the the opposite position with air valve

4.4.6. Reinstall the tire on the balance shaft, erase the mark on the tire, rotate the rim air nozzle to the 12 o'clock position, and press the OPT to confirm the position. At this time, the screen is displayed as shown in F4.23.

4.4.7 Start the measurement by button **【START】** or close the protector.

4.4.8 Rotate the tire until all the outer phase indicators are on, and then mark the tire again at 12 o'clock.

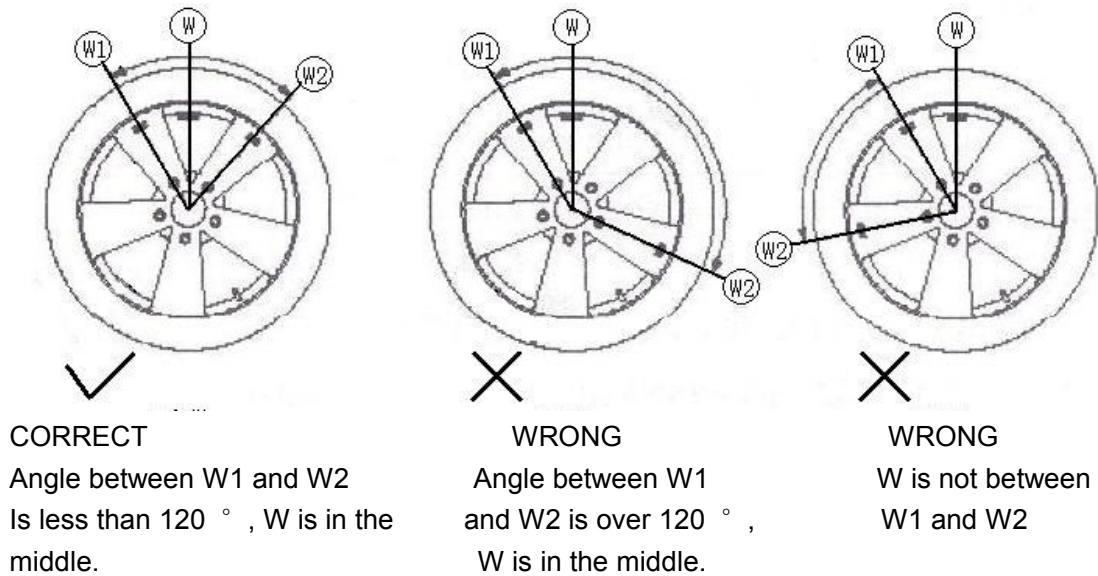
4.4.9. Remove the tire from the balance shaft, separate the tire from the rim, and rotate the tire until the air nozzle position of the rim coincides with the marked position on the tire.

4.4.10. After optimization, button **【F】** + **【OPT】** to exit the OPT mode.

4.4.11. Reinstall the tire on the balance shaft and balance the tire in normal mode.

4.5 Wheel Weight Split

Divide the outside balance weight W into two smaller balance weights $W1$ and $W2$, and attach them at any two points selected by the operator. The positions of the two balance weights $W1$ and $W2$ must be located on both sides of the balance weight W and the angle must not exceed 120 degrees. Refer to F4.25.



F4.25 Split diagram

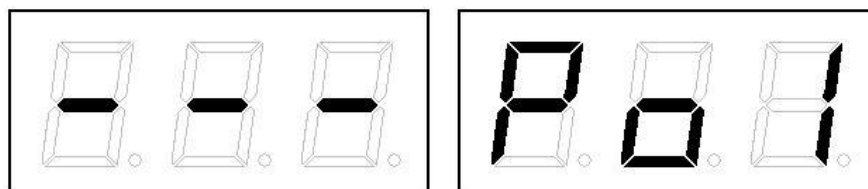
The balance weight hiding function is used for aluminum alloy rims, and the balance weight on the outside can be hidden behind the two spokes. When the position of the balance block on the outside is consistent with the spokes, the weight split mode should not be used.

The balance weight hiding function can be used in the static balance mode, which can separate one static balance weight into two (especially suitable for motorcycle tires).

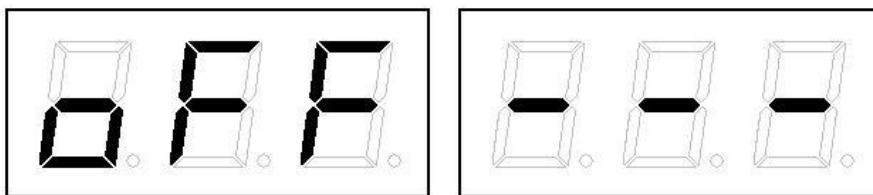
Follow the steps:

4.5.1. For the balance measurement of the tire, do not carry out the balance weight on the outside first.

4.5.2. Button **[F]**+**[ALU]**, and if the external imbalance value is not 0, the machine enters the balance block division hidden mode. The information displayed by the machine is shown in F4.26. If the outside imbalance value is 0, the machine will display the information as shown in F4.27 for 2 seconds, and the buzzer will sound 3 short beeps, indicating that the operation is not available.

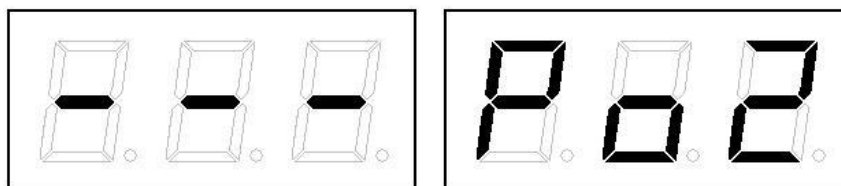


F4.26 Input the position of W1



F4.27 The balance block split hidden function is not available

- 4.5.3. Turn the wheel manually until all the outside unbalance position indicators are on.
- 4.5.4. Manually rotate the tire to the selected W1 position, and then button **【C】** to confirm. The angle between W1 and W must be less than 120 degrees.
- 4.5.5 If the angle is greater than 120 degrees, the buzzer of the machine will sound three short beeps, indicating that the position selection is wrong. If the angle is less than 120 degrees, the machine will display the information as shown in F4.28 and enter the selected page W2.



F4.28 Input the position of W2

- 4.5.6. Manually rotate the tire to the selected W2 position, and then button **【C】** to confirm. The angle between W1 and W2 must be less than 120 degrees and the balance weight W position must be clamped in the middle.
- 4.5.7. If the angle between W1 and W2 is greater than 120 degrees, the machine buzzer will sound three short beeps, indicating that the position selection is wrong, and the machine is still in the position W2 selection state. If the angle between W1 and W2 is less than 120 degrees, the machine screen will immediately display the value of balance weight W2.
- 4.5.8. Lock the tire and attach the balance weight W2 according to the grams prompted on the screen.
- 4.5.9. Manually turn the tire to the previously selected W1 position, and then all the unbalance position indicators will be on. Lock the tire and attach the balance weight W1 according to the grams prompted on the screen.
- 4.5.10. After attaching the weights at W1 and W2 positions, button **【F】 + 【ALU】** to exit the balance weight splitting hidden mode.
- 4.5.11. Restart the measurement to verify the balance effect of balance block segmentation.

5. Calibration Method of Wheel Balancer

The machine must be calibrated before to use. An uncalibrated machine cannot guarantee the accuracy of its measurement. The machine must be calibrated again when replacing the main control board, replacing or adjusting the measuring sensor. When the machine is not measured correctly, it should be calibrated.

5.1 Calibration for common wheel

To calibrate the machine, you need to prepare a wheel with a balanced iron rim with a diameter of about 15 inches and a width of about 6 inches and a balance weight of 3.53oz..The steps are as follows:

5.1.1.Turn on the machine.

5.1.2. Install the tire on the balance shaft and input the tire size parameters correctly.

5.1.3. Button **【F】**+ **【C】**, the machine enters the calibration mode, and the screen displays CAL-CAL.

5.1.4.Button **【START】** or put down the protective cover to start the machine measurement.

5.1.5.After the measurement is completed, the screen displays 100-ADD.

5.1.6.Push the tire to rotate by hand until all the inner phase indicators are on. Install a 100g balance weight at the 12 o'clock position on the inside of the tire.

5.1.7.Button **【START】** or put down the protective cover to start the machine measurement. After the measurement is completed, the screen displays ADD-100. Remove the 3.53oz. balance weight installed on the inside.

5.1.8.Push the tire to rotate by hand until all the outer phase indicators are on. Install a 3.53oz. balance weight at the 12o'clock position on the outside of the tire.

5.1.9.Button **【START】** or put down the protective cover to start the machine measurement

5.1.10. Machine calibration is complete. After self calibration, the screen displays END CAL, and the machine automatically exits the calibration program after 3 seconds. If the self calibration is unsuccessful, the screen displays Err 008. At this time, button **【C】** or **【STOP】** to exit the calibration procedure.

5.2 Calibration of Balance Shaft

The steps are as follows:

5.2.1.Turn on the machine and do not install the wheel and its accessories on the balance shaft.

5.2.2.Button **【F】**+ **【C】**, the machine enters the calibration mode, and the screen displays CAL-CAL.

5.2.3.Button **【A-】**, the machine enters the sensor self-test program, and the screen displays enc-****, in which " * * *" is the position information of the current sensor. Turn the rotating shaft of the machine until the position information of the sensor is displayed as 0, press the **【START】** key to confirm, the machine enters the balancing shaft calibration procedure, and the screen displays AIS-CAL.

5.2.4.Button **【START】** or put down the protective cover to start the machine measurement
After the measurement, the machine balance shaft calibration is completed. The screen displays CLR-END, and the machine will automatically exit the calibration program after 3 seconds.

Attention: When AIS- CAL is displayed on the screen, button **【C】 to clear the calibration data of the balance shaft, and CLR-Err is displayed on the screen. The machine will automatically exit the calibration program after 3 seconds.**

5.3Calibration of diameter ruler

The steps are as follows:

5.3.1.Start the machine.

5.3.2.Install the tire with known diameter on the balance shaft, and manually input the diameter value of the tire rim.

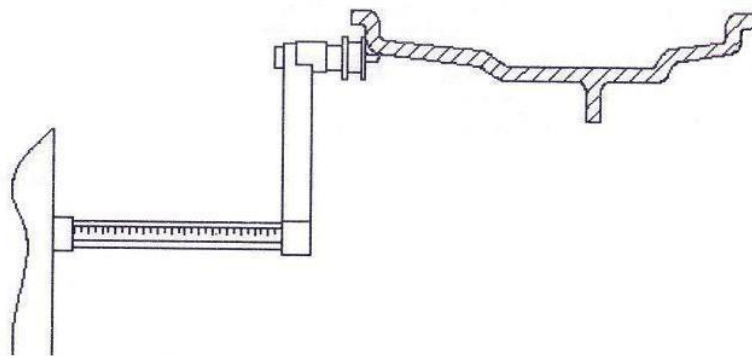
5.3.3.Button **【F】** + **【C】**, the machine enters the calibration mode, and the screen displays CAL-CAL.

5.3.4.Button **【A-】**, the machine enters the sensor self-test program, and the screen displays enc-****, in which "****" is the position information of the current sensor. Turn the rotating shaft of the machine until the position information of the sensor is displayed as 36, press the **【START】** to confirm, the machine enters the calibration procedure of the diameter ruler, and the screen displays di1-****, " * * * " is the measured value of the current diameter ruler.

5.3.5 Place the diameter ruler at the initial position (i.e. at the measurement zero point) on the balance shaft and press **【START】** to confirm.

5.3.6.Press the measuring head of the diameter ruler against the inner side of the tire rim to be tested, as shown in figure F5.1 (screen displays di2-****, " * * * " is the measured value of the current diameter ruler). Press **【START】** to confirm.

5.3.7.After the calibration of the diameter ruler is completed, the machine returns to the self-test program of the sensor.

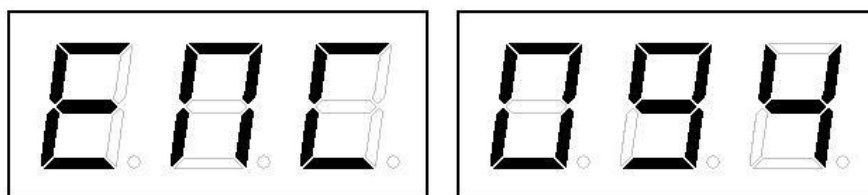


F5.1

6.Service Program

6.1 Sensor self-calibration

Button **【F】+【C】**, the machine enters the calibration mode, and the screen displays CAL-CAL.Button **【A-】**, the machine enters the sensor self-test program, and the screen displays ENC-***, in which "****" is the position information of the sensor. Refer to F6.1.



F6.1 Result of sensor test

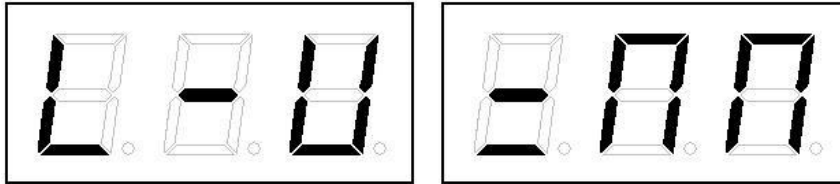
6.2 Precision display

After the machine enters the sensor self-test procedure, rotate the measuring axis until the screen displays ENC-005, button [START] to confirm. The screen displays the current hidden grams Hld 5, press **【B+】** or **【B-】** to modify 5, 10, 15, the three minimum grams hidden, press **【C】** to save and return, press **【STOP】** to exit the setting menu.

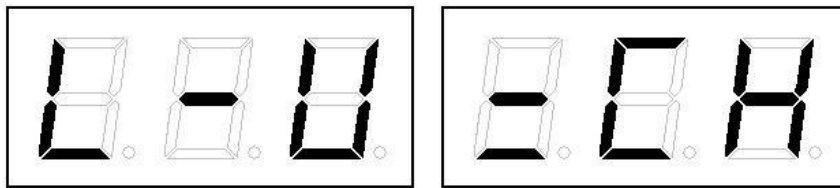
6.3 Millimeter/Inch Shift

After the machine enters the sensor self-test procedure, rotate the measuring axis until the screen

displays ENC-017, and button **【START】** to confirm. The machine enters the setting mode of length unit. There are two options of length unit, which can be selected by pressing **【B+】** or **【B-】**. One is in millimeters, expressed in mm, as shown in F6.2. Another unit in inches is represented by CH, as shown in Figure F6.3. Press **【C】** key to save and return, and button **【STOP】** to exit the setting menu.



F6.2 Millimeter setting



F6.3 Inch setting

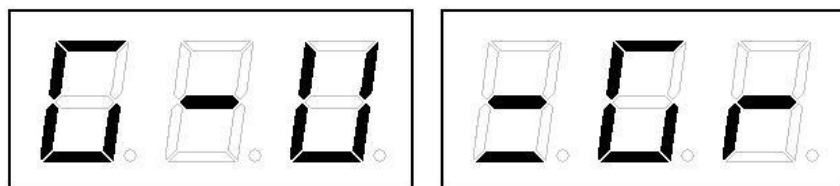
6.4 Shift for the motor test and motor moment of inertia test

After the machine enters the sensor self-test procedure, rotate the measuring axis until the screen displays ENC-022, and press **【START】** to confirm. When the machine enters the measurement, the motor working state is set. The screen displays Er2 On/OFF, which can be selected by pressing **【B+】** or **【B-】**. Button **【C】** to save and return, and press **【STOP】** to exit the setting menu.

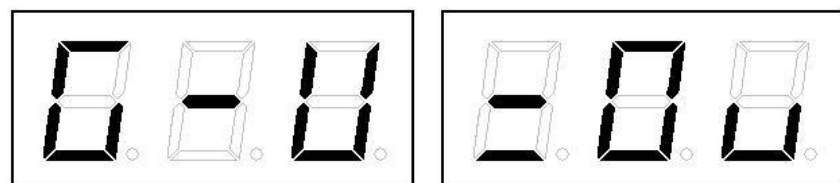
Attention: After this function is enabled, the motor keeps power supply during measurement.

6.5 Grams and Ounce Shift

After the machine enters the sensor self-test procedure, rotate the measuring axis until the screen displays ENC-029, button **【START】** to confirm. The machine enters the setting mode of weight unit. There are two weight unit options, which can be selected by **【B+】** or **【B-】**. One is in grams and is represented by Gr, as shown in F6.4. Another unit is an ounce and is represented by Ou, as shown in F6.5. Press **【C】** to save and return, and press **【STOP】** to exit the setting menu.



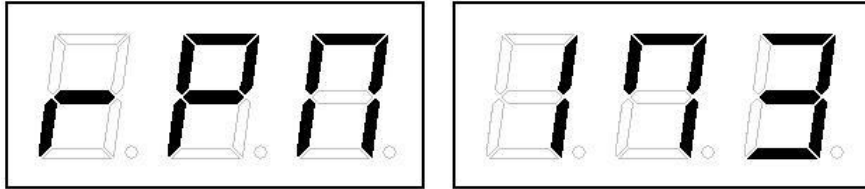
F6.4 Gram setting



F6.5 Ounce setting

6.6 Rotation rate test

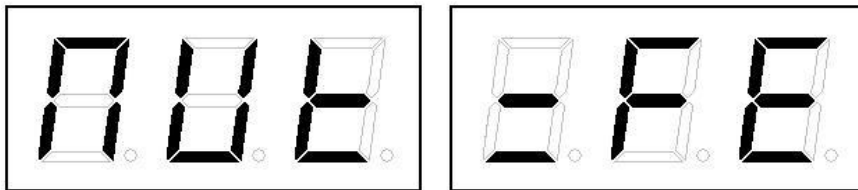
After the machine enters the sensor self-test procedure, rotate the measuring axis until the screen displays ENC-062, and press **【START】** to confirm. Machine entry speed measurement. Press the **【START】** to START the test. During the rotation of the balance axis, the speed of the current balance axis will be displayed on the right side of the screen, as shown in F6.5. In this case, the speed of the balance axis is 173 RPM. Press **【STOP】** to exit the menu.



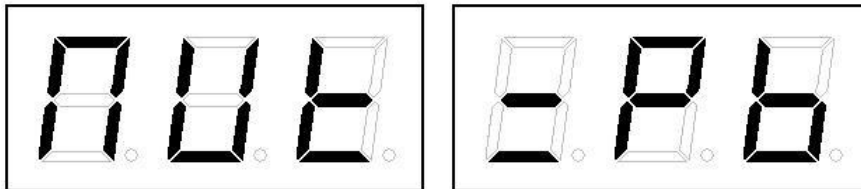
F6.5 Result of axis rotation

6.7 Balance weight material setting

After the machine enters the sensor self-test procedure, rotate the measuring axis until the screen displays ENC-090, and **【START】** to confirm. Machine enter balance block material setting setting. There are two options for the balance block material. One is made of iron, represented by FE, as shown in F6.7. Another is made of leaden, represented by Pb, as shown in F6.7. Press **【C】** to save and return, and button **【STOP】** to exit the setting menu.



6.6 Iron setting



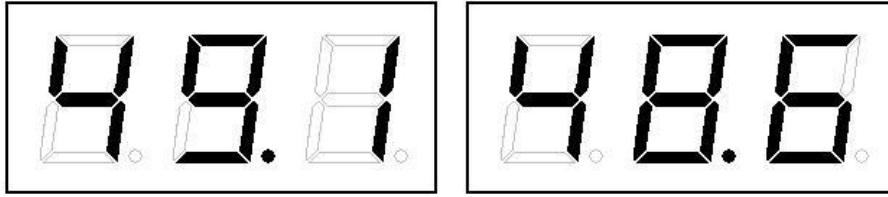
6.7 Leaden setting

6.8 Adjust b

After the machine enters the sensor self-test program, rotate the measuring axis until the screen displays ENC-114, press **【START】** to confirm, and the machine enters the adjustment state of machine structure parameter B. The value of structural parameter B can be modified by pressing **【B+】** or **【B-】** (adjustment range: 150-350). Press **【C】** to save and return, and **【STOP】** to exit the setting menu.

6.9 U/F Conversion unit test

Press **【F】+【C】**, the machine enters the calibration mode, the screen displays CAL-CAL, press **【A+】**, the machine enters the U/F conversion unit test. While, the measurement result of U/F conversion unit is displayed on the screen, and the normal value of the result should be between 45.0 and 55.0, as shown in F6.8. Press **【STOP】** to exit the menu.



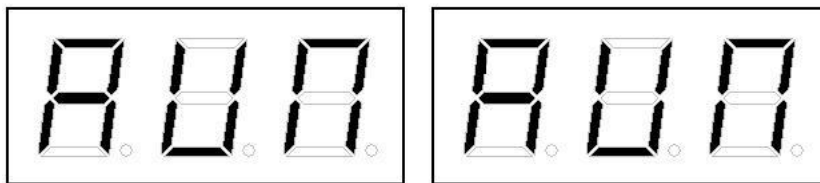
F6.8 U/F Result of Conversion unit test

6.10 Unit display test

Press **【F】** + **【FINE】**, and the machine enters the display unit test state. The on-screen indicator lights up and the digital tube lights up for 5s. This feature is used to test condition of the display unit.

6.11 Machine aging function setting

After the machine enters the sensor self-test program, rotate the measuring axis until the screen displays ENC-100, press **【START】** to confirm, and the machine enters the aging function test selection, as shown in F6.9. Press the **【START】** again to confirm that the machine starts aging operation. Press the **【C】** or **【STOP】** during aging operation to exit the aging. Aging After starting 100 times, the machine exits the aging state



F6.9 Aging setting

6.12 Sensor signal test

After the machine enters the sensor self-test program, rotate the measuring axis until the screen displays ENC-042, press **【START】** to confirm, and the machine enters the sensor signal test. To perform this test, prepare a wheel with a balanced iron rim about 15 inches in diameter and 6 inches in width and a 3.53oz. counterweight, which is mounted on the inside of the rim in phases indicated. Press **【START】** to START the test and measurement, and the measurement results of the two sensors will be displayed on the screen after the measurement is completed. Press **【A+】** or **【A-】** to display the peak value and phase information of the sensor respectively. Press **【STOP】** to exit the men.

7. Trouble code and trouble-shooting

7.1 Trouble code

| Code | Trouble | Reason and solution |
|-------|--------------------------------|---|
| Err01 | No work in main axis | Check the installation of electric motor and Phase measuring plate. |
| Err02 | Lack of inertia in measurement | Check installation of wheel or bearing of balance axis |

| | | |
|-------|--|--|
| Err03 | Out of range error during measurement | Check for tires that are deformed or improperly installed |
| Err04 | Reverse fault | Check whether the connection between the phase measuring board and the main board is normal. |
| Err05 | The protective cover is not closed | The measurement was started when the shield was not closed. |
| Err06 | U/F conversion unit problem | Check whether the output voltage of the power supply board is normal. |
| Err07 | FLASH trouble | Start the machine again |
| Err08 | During the machine calibration phase, there is no gram or sensor failure | Place the standard balance and re-calibrate the machine |
| Err09 | Machine calibration failure | Re-calibrate the machine |
| Err10 | The device is not calibrated | Perform CAR tire mode calibration or MOTO tire mode calibration |
| Err11 | Length ruler failure | When the length ruler is not at zero, check whether the connection between the length ruler sensor and the main control board is normal. |
| Err12 | Diameter scale failure | When the diameter ruler is not at zero, check whether the connection between the diameter ruler sensor and the main control board is normal. |
| Err13 | Width ruler fault | When the width ruler is not at zero, check whether the connection between the sensor and the main control board is normal. |
| Err14 | Undefined | |
| Err15 | Undefined | |
| Err16 | Undefined | |
| Err17 | Undefined | |
| Err18 | Undefined | |
| Err19 | Undefined | |
| Err20 | Machine is not available | Service is not connected with the machine |
| Err21 | Undefined | |

Attention: If a fault code occurs, the fault cannot be rectified according to the preceding table. Contact technical support.

7.2 Trouble-shooting

7.2.1 Can not open.

1. Check whether the main power supply is normal and whether the plug-in connection is loose.
2. Check whether the fuse is blown.

3. Check whether the power board in the machine is normal and the working indicator is normal. If an exception occurs, replace the power board.

7.2.2 The balance result is unstable

1. There is vibration in the machine during the rotation measurement. Remove the vibration and measure again.
2. The installation of the machine is unstable, and the machine should be firmly installed on the flat ground.
3. If the tire lock nut is not tightened, check and tighten the nut again and measure again.

7.2.3 The balance result is incorrect

1. Machine is not calibrated.
2. The input tire parameters are incorrect.
3. The tire is improperly installed and the tire lock nut is not tightened.