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1. Balancing machine overview

1.1. Overview

Wheel imbalance will cause vibration, reduce the adhesion of the car, jump the wheel, and damage the shock absorber and steering parts. Balancing the wheels eliminates or reduces the vibration of the tires to an acceptable level, thus avoiding the adverse effects and resulting damage. This machine is a digital display wheel balancer with microcomputer. It can balance the maximum tire weight of 60Kg. Due to the self-calibration program, the machine system can be adjusted to a certain extent, so it can balance ordinary tires and special vehicle tires (motorcycle tires and racing tires). The special functions of the machine also include that it is suitable for very special rims and provides some optional functions.

1.2 Technical parameters

Voltage 110v/1 HP Motor
power 180-320 W Spindle
speed 190 rpm
Balance accuracy ± 1 G
Rim width 1.5 "" -10 ""
Rim diameter 10 "" -24 ""
Maximum tire weight 70 kg
Noise < 70dB

1.3. Operator precautions

1. Read this operating instruction manual carefully before starting to use the balancing machine.
2. Keep this manual for future reference.
3. Avoid removing and changing machine parts, otherwise normal operation will be affected. When repair is required, please contact the Technical Service Department.
4. Do not use compressed air with too high pressure when cleaning the machine.
5. Clean plastic plate and keyboard base with alcohol (avoid impurities in the alcohol).
6. Before beginning tire balancing, verify that the tire is securely locked to the spindle.
7. Operators should wear tight work clothes to prevent hanging, and non-operators should not start the machine.
8. Avoid placing foreign objects around the balancing machine so as not to affect normal operation.
9. The balancing machine will not be used beyond the functional range specified in the manual of the balancing machine.

1.4 Standard safety feature stop button to stop tire rotation in case of emergency.

2. Balancing machine installation

2.1 Mechanical installation

2.1.1 Remove the package and check whether there is any damage or missing parts. If there is any doubt, do not use the machine. Contact the supplier: Chinese manual: 1 copy.

2.1.2 The balancing machine must be installed on a solid concrete floor or similar surface, as measurement errors will result if the floor is not solid.

2.1.3 A space of 500 mm shall be provided around the balancing machine to facilitate operation.

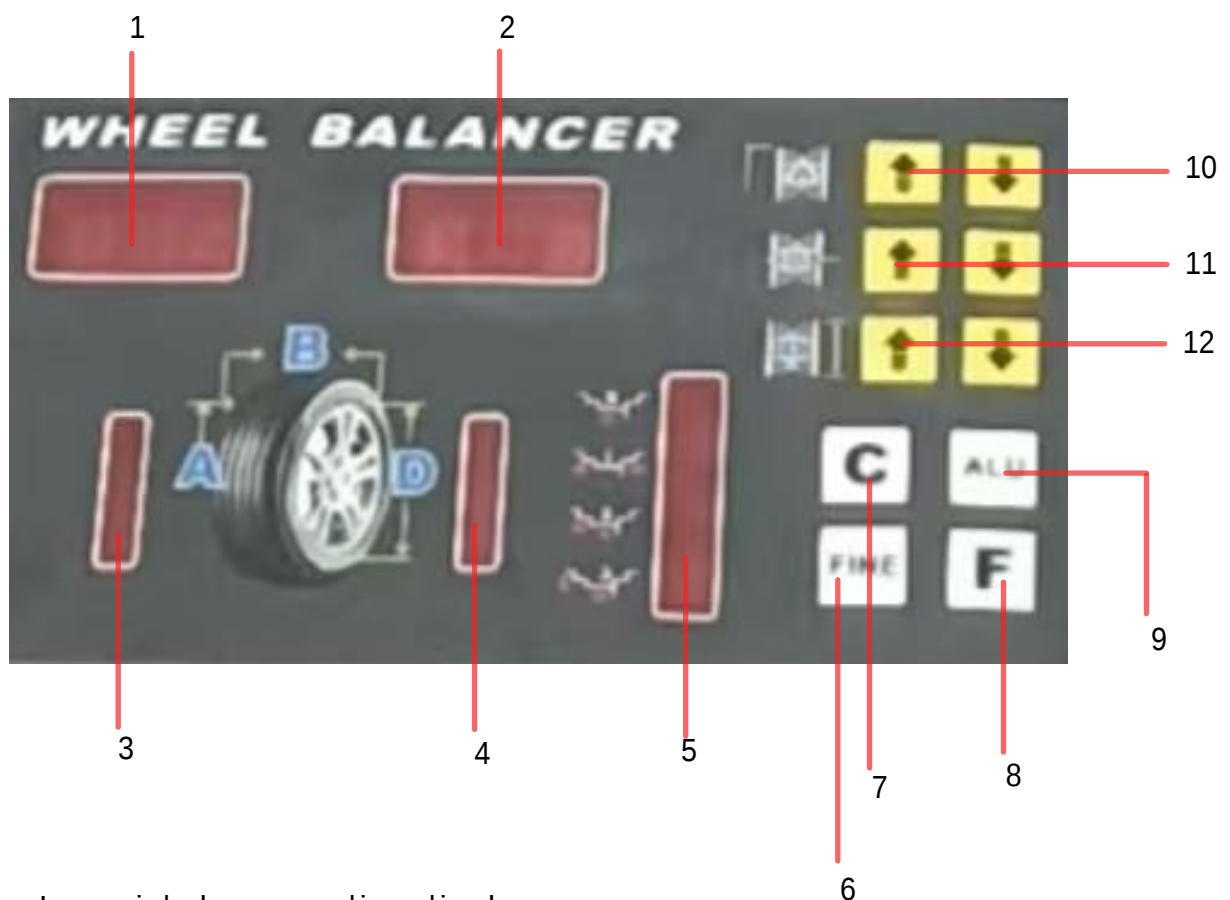
2.1.4 Install the foundation screw according to the position of the mounting hole of the machine base to fix the machine.

2.2 Electrical connection (must be operated by professional electrician)

2.2.1 Select the corresponding power supply according to the technical parameters, and install the automatic idle switch.

2.2.2 Choose the plug with grounding protection, note that the yellow and green flower wire is the ground wire, must be reliably grounded, can not press the wrong wire, otherwise the computer will be burned out.

3. Panel



1. Inner imbalance reading display
2. Outer imbalance reading display
3. Inner imbalance position indicator light
4. Outer imbalance position indicator light
5. Balance mode indicator light
6. Display actual imbalance value <5g (0.30Z) key
7. Recalculate imbalance key
8. Dynamic/static imbalance selection key (optional function key)
9. Balance mode selection key
10. Manual input rim distance key
11. Manual input rim width key
12. Manual input rim diameter (d) key

4. Install the tire

4.1 Install the spindle screw

When installing the spindle screw, be sure to wipe the anti-rust oil on the installation contact surface with industrial alcohol or gasoline.

In order to avoid affecting the installation accuracy, there is a spindle screw rod in the accompanying accessories. Align it with the installation hole on the spindle, install the fixing long bolt, and fix it with the hexagon wrench (it must be tightened, otherwise it will affect the repeated measurement accuracy).

4.2. Install the tire

4.2.1 Select the taper plate matched with the wheel rim hole, with the small end of the taper plate facing inward, and install the tire first and then the taper plate.

4.2.2 After installation, use the speed nut to lock.

5. Rim data input method

A rim database is stored inside the balancing machine, and the rim data can be entered by pressing + or- to select the correct rim data.

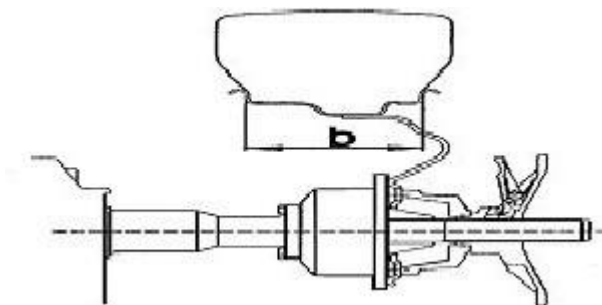
5.1 Enter the rim distance a.

5.1.1 Pull out the measuring ruler on the side of the machine as shown in the figure, hold it against the rim edge, and read the distance value.

5.1.2 Press the distance input key (9) to input the measured distance value (increase or decrease by 0.5cm each time, total length: cm).

5.2 Enter the rim width B.

5.2.1 Use the width measuring ruler to measure the rim width (the measuring position is shown in Figure 2).



(图二)

5.2.2 Press the width input key (10) to input the correct rim width. Press the key to increase or decrease the rim width by 5mm or 0.25 " each time. The displayed values are as follows: 0.2 corresponds to 1/4 " , 0.5 corresponds to 1/2 " , and 0.7 corresponds to 3/4 " .

5.3 Input the rim diameter d, mark the diameter value on the tire, press the key (11) to input the rim diameter, and press the key to increase or decrease: 12/13 mm or 0.5 " .

6. Pre-Service Self-Calibration Procedure for Balancing Machines

Note: Run the self-calibration procedure whenever a measurement error is suspected during initial installation or use of the equipment

Order to ensure accurate measurement of the balancing machine. Turn on the power switch on the machine, install a medium size (13 " -15 ") tire, input the rim data, hold down the (F) keyboard and press the (C) key at the same time.

Display (CAL) (CAL) Unbalance position indicator is fully on, release the key (put down the protective cover),

Rotate the spindle until it stops.

Display (Add) (100) On the outside of the rim, add 100 G (3.5 oz) of balance weight directly above the spindle when the unbalance position indicator is fully illuminated. Put down the protective cover, rotate the spindle, and stop.

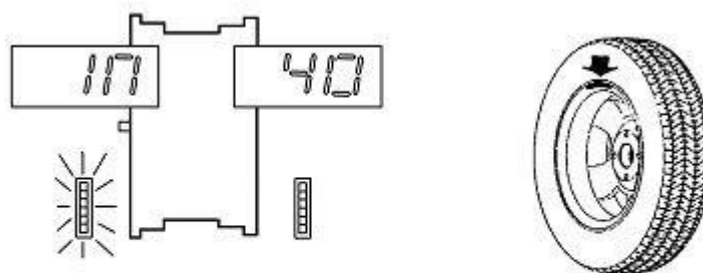
Display (100) (Add) On the inside of the rim, add a 100g (3.5 oz) balance weight directly above the spindle when the unbalance position indicator is fully illuminated. Put down the protective cover, press the (START) key, and the spindle will rotate again until it stops.

Show (End) (CAL) The self-calibration is finished, and the self-calibration data is stored in the memory and is not lost even after shutdown. After that, the balancing operation can be carried out.

7. Wheel balance operation

7.1. Car and small and medium truck tire balancing. Turn on the power switch, install the tire to be balanced, input the rim data, rotate the main shaft, and the tire rotates. After stopping, the left display screen displays the imbalance value inside the tire, and the right display screen displays the imbalance value outside the tire. Select the balance block for standby according to the imbalance value inside and outside the tire. Rotate the tire slowly by hand until the left unbalance indicator is fully on, indicating the highest point inside the rim at this time (12 o'clock

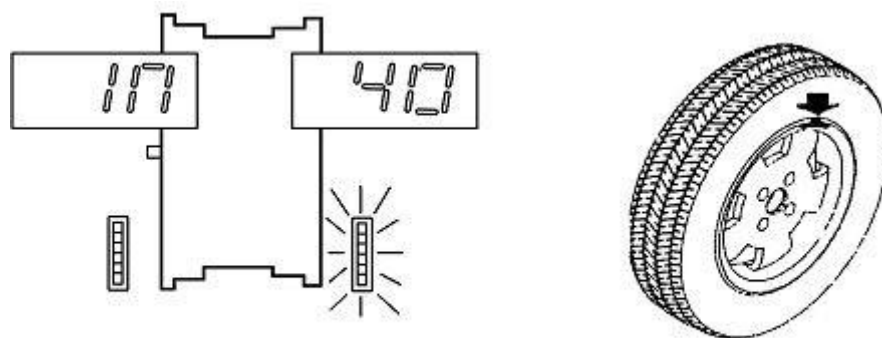
) is the unbalanced position, and the corresponding balance weight is added at this position, as shown in Figure 4.



(图四)

Find the inside unbalance position and add the balance weight to balance.

Rotate the tire slowly by hand until the right unbalance indicator is fully on, indicating that the highest point (12 o'clock) on the outer side of the rim is the unbalance position, and add the corresponding balance weight at this position, as shown in Figure 5.



(图五)

Find the outer unbalanced position and add the balance weight to balance. Cover the protective cover, rotate the tire, and repeat the above operation until (0) (0) is displayed on both sides. Generally, it is normal to repeat the operation within three times.

7.2 Recalculate imbalance values

Enter the new rim data in the same way as above. Press the (C) key without rotating the tire. The new imbalance value is immediately displayed on the screen. Press the C key again and the rim data will be displayed.

7.3 Actual unbalance value display

The standard balance weight on the market starts from 5g and increases upward in units of 5g, so the maximum residual imbalance can reach 4G, which makes the imbalance still remain and causes jitter. During the balance operation, the computer will select the most suitable balance weight and adjust it according to the position of the balance weight and the imbalance value. Press the (FINE) key to display the actual unbalance value (0-4g). That is, when the unbalance value is less than 5 G, it shows (0) To display the remaining unbalance values, press the (FINE) key.

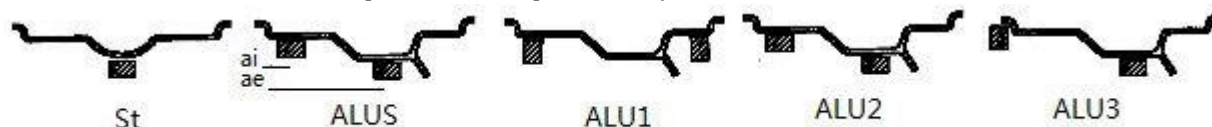
7.4 Normal mode: the steel or aluminum alloy rims are balanced by clamping balance



weights on both sides of the rims.

Static-dynamic balancing mode. The following functions are applicable to the balancing mode in which the balance weight position is different from the normal balance weight position. Press the (ALU) or (F) key to select the required function. Press the balance weight position, and select the normal balance side by referring to the balance weight position indicator

(If the machine is equipped with a laser positioning lamp, the laser lamp will be lit after entering the ALU function, and the lead block will be pasted on the laser indication line when the position lamp is fully lit.)



(图六)

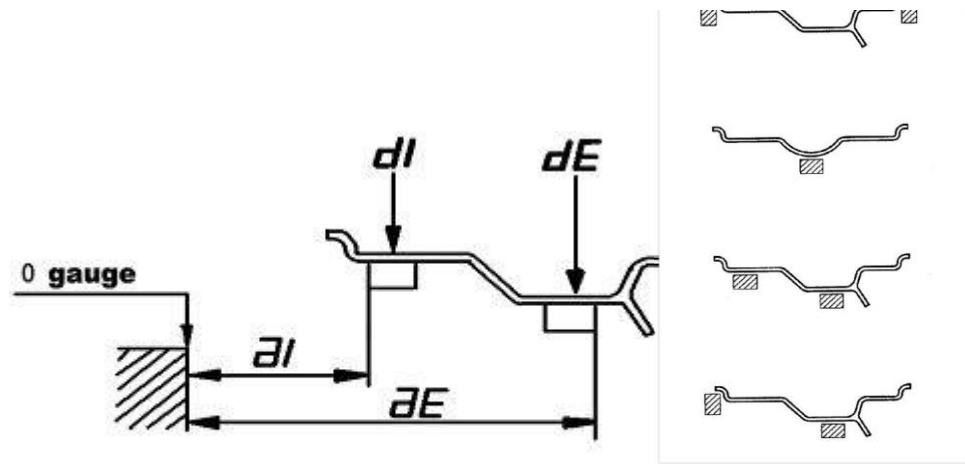
balance motorcycle.

ALU1: Glue balance weight on rim edge

ALU2: rim inner adhesive balance weight, inner concealed adhesive balance weight ALU3: rim inner clamp balance weight, inner concealed adhesive balance weight.

7.5 Special shape rim balance (S balance mode) This function is suitable for very special rims, and the ALU2 mode can not guarantee sufficient balance. Press the (ALU) key to select the "S" balance mode (corresponding indicator light), and input the rim data as

shown in the figure below.



(图七)

- a) To change the aI value, press a, a Key change.
- b) To change the value of aE , press the B, B key.
- c) To change the dI value, press the d, d key.
- d) To change dE , press and hold the (ALU) key and press the d, d keys to change. Note that the default value is $dE = 0.8 dI$. When dI changes, dE returns to the default value.

When the system calculates the distance between the center of gravity of the balance weight and the balancing machine, it will automatically consider the balance weight as 14mm. When displaying the tire imbalance value of the corresponding rim data, press the (C) key. After rotating a circle, the system will automatically re-balance the tire. Otherwise, press the (START) key to re-balance the tire.

8 . Troubleshooting

When the machine is working, the machine may not work normally due to various reasons. After the computer detects the reason, the "Err" and fault code will be displayed on the left and right display screens.

The fault codes are as follows:

Err	Meaning
-----	---------

- | | |
|----|---|
| 1. | There is no rotation signal, the motor does not rotate or the position sensor is in the wrong position, the sensor is damaged, the plug is in poor contact, and the computer board is damaged. |
| 2. | When the computer collects the measurement data, the rim speed is less than 60 rpm, the tire is not installed, and the belt is too loose and too tight, which will cause the error. |
| 3. | Calculation error. The amount of unbalance is out of the calculation range. |
| 4. | The motor rotates reversely and the position sensor is incorrectly wired. |
| 5. | The protective cover is open when the (START) key is pressed. |
| 6. | Self-calibration error requires re-self-calibration, or power board, computer board failure. |
| 7. | Data memory contents are missing or corrupted. |
| 8. | Self-calibration error. It may be that the balance weight of 100g is not added during the second rotation or the cable of the pressure sensor is broken, the pressure sensor is damaged, and the plug is in poor contact. |

10. Routine maintenance (non-professional personnel)

Disconnect the power supply before carrying out service operations.

10.1 Adjust the belt tension

1. Remove the upper cover.
2. Loosen the motor screws and move the motor until the belt is properly tensioned. After the belt is pressed down by hand, it is about 4mm lower.
3. Tighten the screws of the motor and reinstall the upper cover.

10.2 The equilibrium shows instability.

After the balanced tire is reinstalled, it shows imbalance, which is not a machine display error, but generally caused by rim installation error. The conical surfaces of the two mounting surfaces of the mounting rim are different from the shaft or the wheel rim hole is deformed, the clearance between the wheel rim and the taper disc is too large, the quick lock nut is loose, the main shaft diameter rod is not tightened, and the tire is not inflated.

All of the above will cause errors.

