

V1.00.000

2018-08-18

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1. Introduction

1.1 General

The machine is a compute-based wheel balancer with easy operation, accuracy measuring, complete functions, security and reliability.

1.2 Features

- ✧ imported computer element, first rate electric driving system, long service life
- ✧ high intensity plastic shield, strictly in conformity to the national safety operation procedure
- ✧ “stop” key is available for stopping the running under emergency
- ✧ full automatic dynamic balance and static balance detection function
- ✧ with the function of balancing three kinds of aluminium alloy rim
- ✧ high balance precision $\pm 1g$, short balance term 8s/t
- ✧ self-calibration and full automatic failure diagnosis function

1.3 Technical Data

Max. wheel weight	65kg	Max tire diameter	650mm
Power supply	220V	Noise	<70dB
Balancing accuracy	$\pm 1g$	Rim width	1.5/18”
Rim diameter	10/15”	Balancing cycle	8s
Balancing average speed	180rpm	Power consumption	1.1kw

2 Transport and Installation

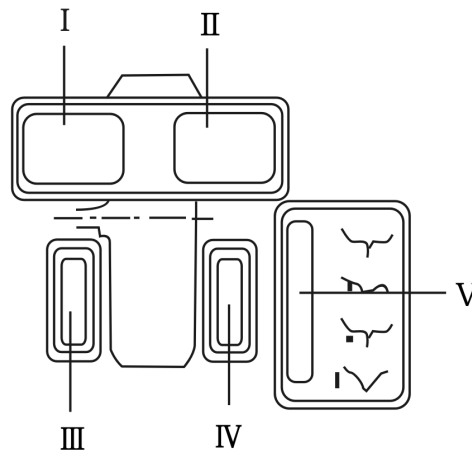
2.1 Haulage and installation of the machine

- ✧ To haulage the balancer, the chassis is the only recommended place to lift. Never lift the machine with the spindle shaft when installation or operation, otherwise will lead the disrepair damage.
- ✧ Install the balancer on the steady and smooth ground. It should keep 500mm distance away from the wall to maintain good air circulation. There are screw holes on the chassis. Anchor screw could be used to fix the machine on the ground. Measuring error could be brought due to unstable fixing.

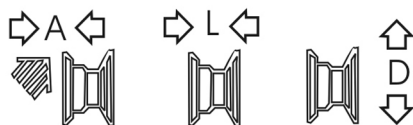
2.2 Recommendations

- ✧ Voltage stabilizing power is recommended to use in the area where have not a stable power supply.
- ✧ Before starting to use the balancing machine, carefully read the operating instruction manual. Keep the manual in a safe place for future reference. Consult the technical person for any misunderstanding.
- ✧ Do not uninstall or replace the parts without the instruction of the technical person, otherwise the regular operation of the machine could be affected.
- ✧ Do not clean the machine by compressed air with exceeded pressure.
- ✧ Use detergent to clean plastic panels and shelves termly.
- ✧ The machine operator should not wear necktie, long hair or loose cloth. She or he should stand at the side face of the machine and make sure that unauthorized personnel do not approach the machine during the work cycle.
- ✧ The balancing machine should not be used for purposes other-than those described in the instruction manual.
- ✧ All the electrical installation should be operated by professional electrician .
- ✧ Make sure that the ground wire has a reliable ground connection, and cut off the power when the maintenance and repair operation is on.
- ✧ Circumstance requirement: Temperature: 0°C —50°C , dry and drafty.

3. Cotrol Panel



- I. Digital display, AMOUNT OF UNBALANCE, inside
- II. Digital display, AMOUNT OF UNBALANCE, outside
- III. Indicator, POSITION OF UNBALANCE, inside
- IV. Indicator, POSITION OF UNBALANCE, outside
- V. Indicators, correction mode selected



- A. Push buttons, manual DISTANCE input
- L. Push buttons, manual WIDTH input
- D. Push buttons, manual DIAMETER input



Cycle start push button



Push button for reading unbalance<5g(car)

Push button for reading unbalance<50g(trunk)



Emergency stop push button



Push button for recalculating /self-calibration



Program selection push button

NOTE: Only use fingers to press the push buttons. Never use the pliers for weight fixing/ removing or any other pointed objects.

4. Operation

Turn on the main power, the balancer begins the interior self-diagnostic program. If “—A— 8.0” is displayed on the display window, the balancer can proceed normally.

4.1 Wheel Mounting

Before wheel balancing, remove the old balance leads and mud, carpolite or metal stuck in somewhere, such as the gaps in wheel. Make sure that the air pressure of the tyre accord with the standard value and there is no deformation on the rim locating surface and mounting hole. While balancer running, please do not impact it to ensure the best testing result.

◇ location mode for small wheel



Spindle shaft----wheel (rim attachment face in by)-----cone-----quick lock nut

✧ location mode using purpose made flange

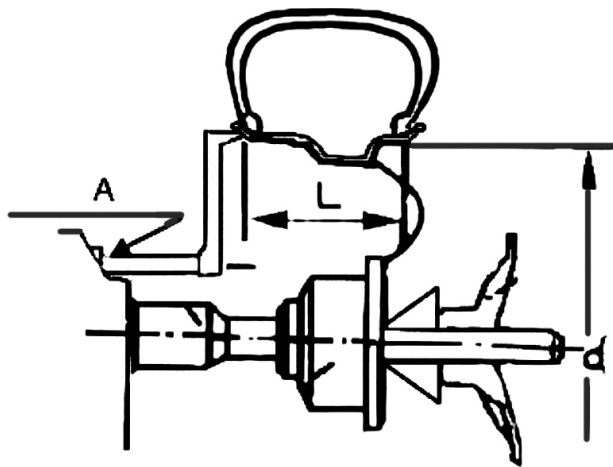
This method is available for the tire with a diameter 650 or 750. You could choose flanges according to the size of the attachment face (two kinds of flange).



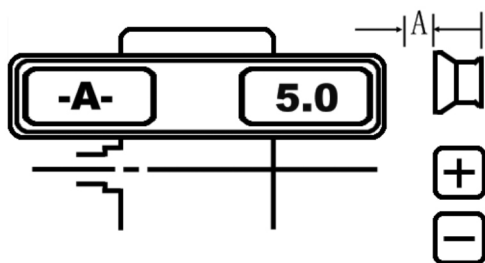
Adapter-----flange-----wheel----big cone----- lock nut

Note: the adapter should be suitable for the rim center hole, pay attention to the direction, else measurement error could be possible.

4.2 Input the Wheel Data



I Input the measurement data "A"

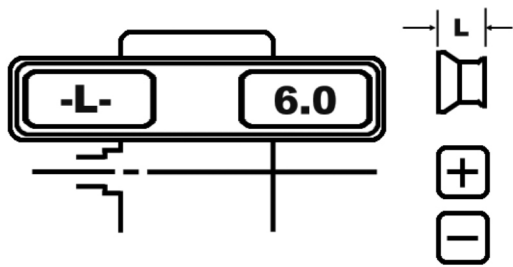


On the measure statue, pull out the slide ruler and place its head on the inside of rim and keep the head touch with the rim. Till the "A", (wheel mounting distance) displayed on screen.

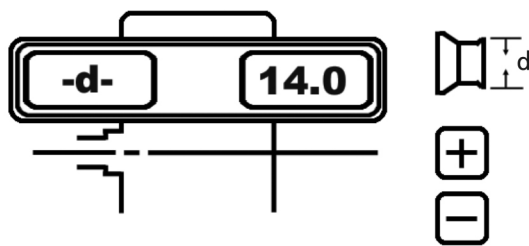
Press "+" key to plus a defined value
 Press "-" key to minus a defined value
 till equal to the correct measured figure.

II Input measurement data "L"

Measure the wheel rim width by a caliper and by Press "+" or "-" key to plus or minus a defined value to change the displayed figure
 till equal to the correct measured figure.



III Input measurement data "d"

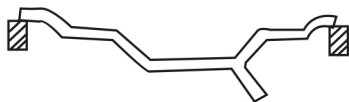


Find the named diameter "d" marked on the tyre.
 Press "+" or "-" key to plus or minus a defined value to change the displayed figure till equal to the "d" figure.

4.3 Balance Mode Selection

As shown in the fig, by adhering or clip-on the lead block at different positions, (profiles), the exact balance effects can be got.

Press "F" key to enter mode Dynamic balance, mode Static balance, mode ALU-1, mode ALU-2 and mode ALU-3 in turn. This balancing mode is active automatically when the machine is powered on.



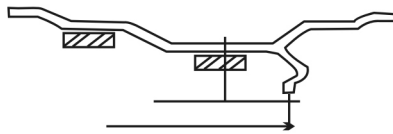
Dynamic balance - This is used in testing dynamic imbalance when the wheel running and to eliminate the imbalance by clip-on the lead block at two points that got from the testing. The two points separate is obtained on the outside and inside of rim. It is suitable for steel or aluminum alloy wheel rim.



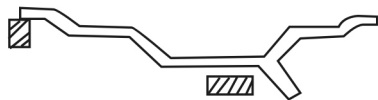
Static balance- The mode should be selected in the case of static rims or rims on which only one lead block is adhered on one rim. (e.g. Motorcycle wheel).



ALU-1 : It is suitable for the light alloy wheel rim. Adhere to these two lead blocks on the shoulders of the wheel rim.

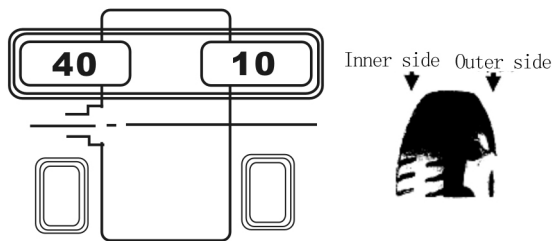


ALU-2 : It is suitable for the light alloy wheel rim. Adhere to the lead block on the position showed in the fig.



ALU-3: Clip-on the lead block at the inner rim and adhere another on the outside (as showed in the fig.)

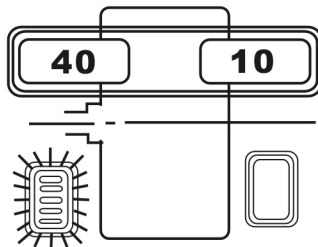
4.4 Wheel Balancing



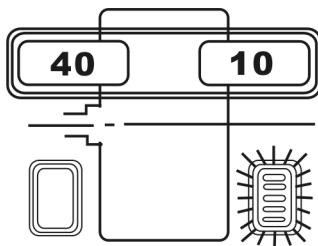
- ✧ Press **start** key to perform the balance test. Eight seconds later, the balancer brakes and the exact imbalance value can be analyzed and be displayed. (For example: outside screen displays 10g. inside screen displays 40g.)

40 outer imbalance value

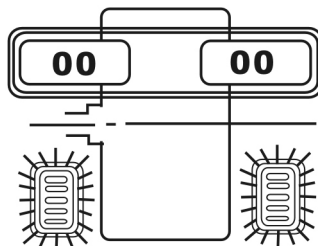
10 inner imbalance value



- ✧ Turn the wheel slowly by hand to locate the balanced point, make sure that all the balance indicators on the inner lateral side are light. Clip-on or adhere 40g lead block on the top point of the wheel rim inside



- ✧ Turn the wheel slowly by hand to locate the balanced point, make sure that all the balance indicators on the outer lateral side are light. Clip-on or adhere 10g lead block on the top point of the wheel rim outside



- ✧ Repeat above operation till the display screen shows 0-0, the operation ends and remove the wheel.

Note:

- ✧ For the equipment using single phase power supply, when starting the operation push the wheel by hand one time to assist starting and prolonging service life.
- ✧ Make sure all the inputted measurement data are correct. Press "R" key, the value of "A","L","D" could be detected automatically.
- ✧ Make sure the selected balance mode is suitable for the outline of wheel rim.
- ✧ Make sure the lock nut is tightened.
- ✧ Do not strike the spindle shaft when installing or removing the wheel.
- ✧ When balancing the rim with a clip-on lead block, use a balancing weight to stick the lead block on the rim edge. After the balancing ends, strike it close on the ground. Do not strike it on the spindle shaft in order to avoid the damage of the sensor. To keep the adhered lead block being stuck firmly, before adhering, you must clean the adhering surface and if it is needed should use the organic solvent or detergent.

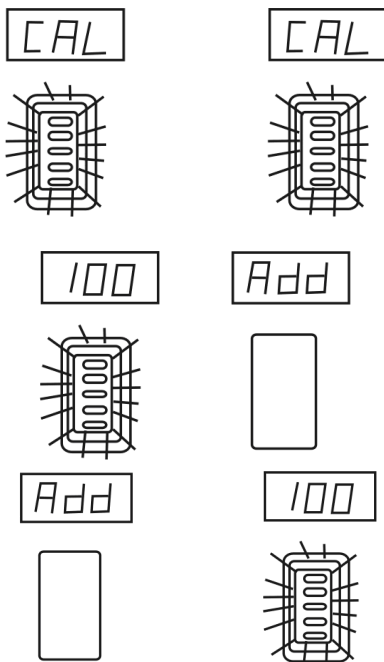
5. Maintenance and Repair

5.1 Self Calibration

The self-calibration operation is finished in the manufacturer's plant. This operation could be re-do if the machine services too many years or the spares are charged or there is a big imbalance value. Install a middle-scale wheel (which has a rim diameter 13 or 14 inch) on the spindle shaft. Input the correct value of "A","L" and "d".

Note: The wheel chose for self-calibration should be in good condition and the value inputted should be correct else measure error could be possible.

Use a balanced wheel for self-calibration



I . Press "R" key, half of a second later, meanwhile press "START" key, "CAL"—"CAL" displays on the control window and all the indicators light and blink. Withdraw the fingers when all the indicators put out.

II . Press "START" key, the wheel revolves and brakes automatically, "100"—"ADD" displays on the control window. Move the wheel until all six lights on left side are turned on. Attach an 100g weight at the highest vertical position (12 o'clock position) on the inner side of the rim.

III. Press "START" key, the wheel revolves and brakes automatically, 'ADD'-'100' displays on the control window. Move the wheel until all six lights on the right side are turned on. Remove the weight from the inner side of the rim and attach it to the highest vertical position (12 o'clock position) on the outer side of the rim.

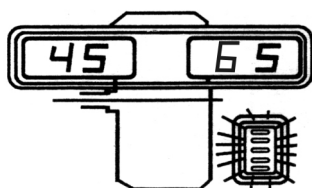
End

CAL

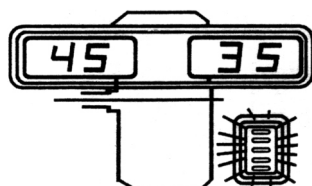
IV. Press "START" key, the wheel revolves and brakes automatically. 'CAL'-'END' displays on the control window. The calibration is done.

Use an unbalanced wheel for self-calibration

Locate the unbalanced point of the wheel rim before the operation begins and clip-on or adhere the 100g lead block on this position.



V. Locate the unbalanced point of the wheel rim on the outside. Turn the wheel to make all the indicator light. Make a marker with chalk at the top position of the tire outer edge.



VI. Following the procedure described in 5.1 " I " and 5.1 " II ", clip-on or adhere the 100g lead block on this marked position.

Trouble shooting for the self-calibration

Error Description	Reasons	Solutions
Display "E-rr-8"	1.Didn't clip-on the 100g lead 2.The electric connect wire of the pressure sensor is broken away 3. Computer board error.	1. Perform calibration with 100g of standard lead 2.Check the connection and Connect the electric wire 3. Change a computer board.
The self-calibration performed by using a wheel has a too big imbalance value	1.The wheel has a big error value	1.Use a balanced wheel
When the self-calibration ends, there is too big imbalance value for the 100g lead block or the position is not on the positive down or too many lead blocks were used	1.The wheel has a big error value or there are something else on the wheel 2.Unstable displayed value	1.Change a wheel 2.Replace a new computer board

Contact the professional if above methods do not work.

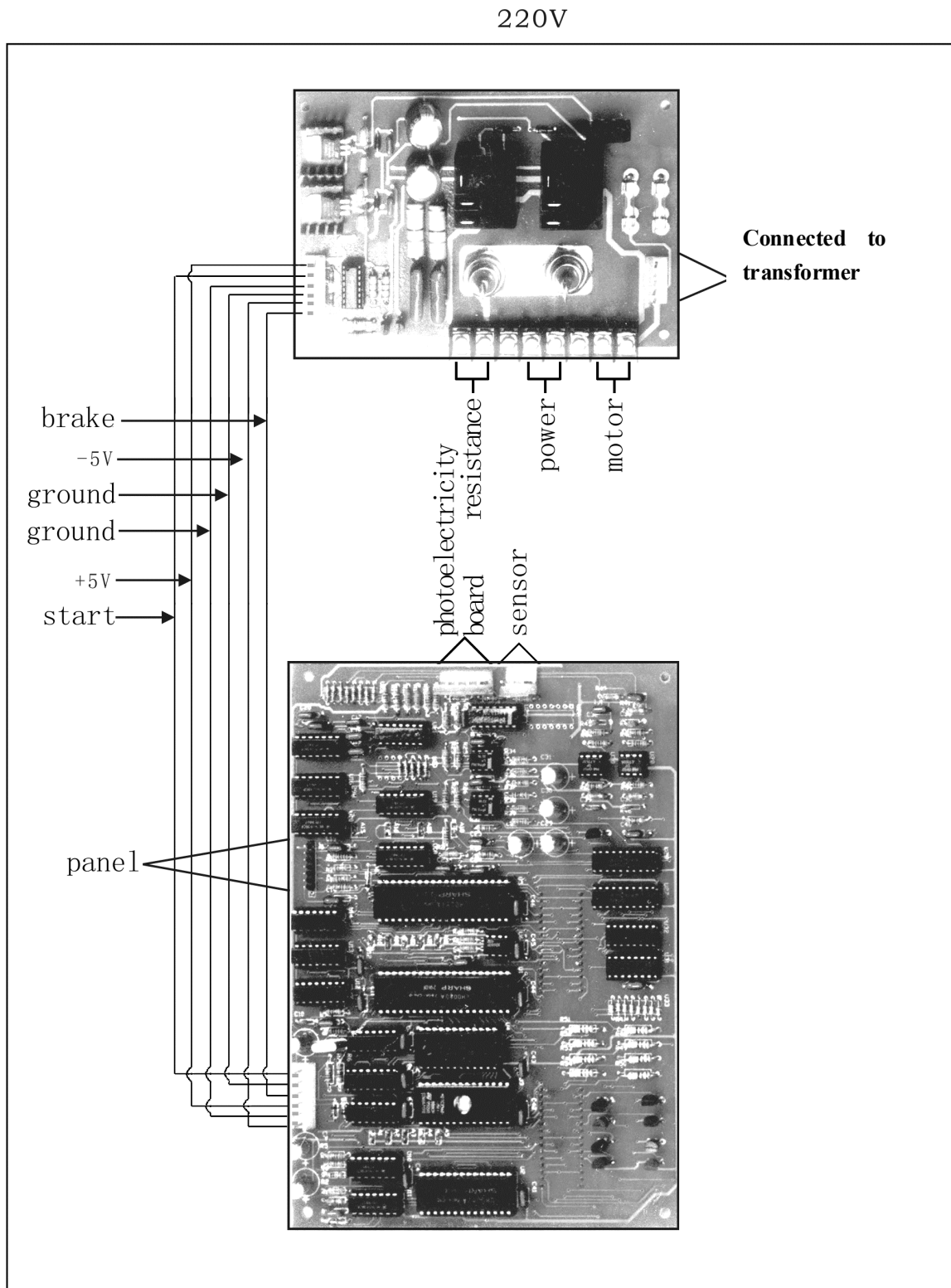
5.2 Wheel Balancer Troubleshooting

Error Descriptions	Reasons	Solutions
Screen no display during start	<ol style="list-style-type: none"> 1.The switch is wrong 2. External circuit is wrong 	<ol style="list-style-type: none"> 1.Change another one 2. Check the electric power circuit with multi-meter.
Display normal, but the machine can not start and with some noise , Err1 displayed	<ol style="list-style-type: none"> 1.The capacitor of the electric machine is disabled 2.380V power with no enough phase 	<ol style="list-style-type: none"> 1.Change capacitor 20UF/400V 2.Check the power
Err2 displayed	<ol style="list-style-type: none"> 1.The wheel is not installed 2. Install the rim but with no tyre. 3. The adaptor is not tightened. 4. The wheel is not installed correctly or it is not tightened. 5. The belt is over loose or tight. 	<ol style="list-style-type: none"> 1.Install the wheel 2.Install the tyre 3.Tighten the anchor screw 4.Install a suitable adaptor 5.Readjust the belt
Err3 displayed	The wheel has a too big imbalance value	Change another wheel or do the self-calibration again.
Err4 displayed	<ol style="list-style-type: none"> 1. If the wheel turned reversely, the phase wire is wrong connected. 2. If the wheel turned forward, the sensor is wrong. 	<ol style="list-style-type: none"> 1.Adjust the phase 2.Readjust the position or change another one
Err5 displayed	The wheel shield is not put down	Put down the shield
Err7 displayed	EMS memory data lose	Do the self-calibration again
Only display "00-00",no values displayed	<ol style="list-style-type: none"> 1.The wire of the sensor is cut off or it is not well connected 2.EMS memory data lose 	<ol style="list-style-type: none"> 1.Connect the wire 2.Refer to the manual, correct the EMS memory value
The value of variable range exceeds 5 grams when the wheel turns.	<ol style="list-style-type: none"> 1.The wheel is not clean or the fitting surface of the rim center hole is distorted 2.The sensor is wet or the lock nut is loose 3. The voltage is lower or the air pressure of the tyre is low or the adaptor is not tightened or the cabinet is not fixed on the ground. 	<ol style="list-style-type: none"> 1.Change a wheel 2.Drying it or readjust the sensor 3. Install voltage stabilizer; charge the tyre; tighten the flange or the adaptor by a lock nut; fix the cabinet on the ground.
The value of variable range reaches tens of grams when the wheel turns.	<ol style="list-style-type: none"> 1.The wheel is not clean or the imbalance value is too big. 2.The sensor is out of action 3.The voltage is lower 	<ol style="list-style-type: none"> 1.Change a wheel 2.Check the sensor and the connection Check the power or install a voltage regulator

Error Descriptions	Reasons	Solutions
The electric machine can stop over ten seconds after the "START" key is pressed and there is a reading displayed on the window. But there is no brake signal.	<ol style="list-style-type: none"> 1. The power board is damaged. 2. There is a disturb. 	<ol style="list-style-type: none"> 1. Change a power board. 2. Turn off the machine then reset it.
The balanced value is unstable. It is very hard to get the value "00".	<ol style="list-style-type: none"> 1. The sensor is wet or it is damaged. 2. The program is disordered. 	<ol style="list-style-type: none"> 1. Readjust it, drying it and re-do self-calibration or change a sensor. 2. Re-do self-calibration.
The balancer can not brake when the value displayed.	<ol style="list-style-type: none"> 1. The brake system is damaged. 2. There is a disturb. 	<ol style="list-style-type: none"> 1. Change a power board. 2. Reset the machine.
There is a difference value over 10g when the wheel is removed and installed.	<ol style="list-style-type: none"> 1. The inner bore of the wheel is not clear or neat. 2. The adaptor is not well installed. 	<ol style="list-style-type: none"> 1. Change a wheel 2. Check the installed surface.
Err8 displayed when self-calibration is done.	See 5.1	
Imbalance value exceeds hundreds of grams	<ol style="list-style-type: none"> 1. These three EMS memory parameters are disordered. 2. The error value of the wheel is too big. 	<ol style="list-style-type: none"> 1. Readjust the value to the standard value in term of the manual. 2. Change a wheel

Contact the professional for the problems could not be resolved by above methods.

6 The Wiring Diagram of the Power Board



Warranty

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Declaration

The above warranty is able to replace any warranty in other forms.

Order Information

Replaceable and optional parts can be ordered directly from your LAUNCH authorized supplier. Your order should include the following information:

1. Quantity
2. Part code
3. Item description

Customer Service

If you have any questions on the operation of the unit, please call: 86-755-84528767.

If your unit requires repair service, return it to the manufacturer with a copy of the sales receipt and a note describing the problem. If the unit is determined to be in warranty, it will be repaired or replaced at no charge. If the unit is determined to be out of warranty, it will be repaired for a nominal service charge plus return freight. Send the unit pre-paid to:

Attn: Customer Service Center
Shenzhen Launch Tech. Co., Ltd.
Launch Industrial Park,
North of Wuhe Rd.,
Banxuegang, Longgang,
Shenzhen, Guangdong,
P. R. China, 518129