



WHEEL BALANCER
ITEM NO: RBB1280



This instruction manual has been prepared especially for you.
The manner in which you care for and maintain your banlancer
will have a direct effect on its overall performance and longevity.

READ THIS ENTIRE MANUAL BEFORE OPERATION BEGINS.

RECORD HERE THE FOLLOWING INFORMATION
WHICH IS LOCATED ON THE SERIAL NUMBER DATA PLATE

SERIAL No. : MODEL No. : MANUFACTURING DATE:
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Warranty Item

The machine include the operation system, tooling and accessories will be under warranty for one year. Afer the confirmation of eliminate improper damage and unreasonable use. During this time, the manufacturer will repair or change the return parts or machine from the customers. The charge will be paid by the manufacturer. But the manufacturer will not have the responsibility for the normal wear and tear, improper use or transport, or lack of maintenance. The manufacturer will not inform the customer when the products improved or production line rebuild, the difference rise from this is not include in this warranty. All the change of this warranty item will be according to the machine's model and serial number, all the complain must be provide the machine's model and serial number.

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III、 Warning for the rotating part of the machine



this sticker place near the balancing shaft, to remind the user that this part is the rotate part, belong to the dangerous part, not touch it by hand, the arrow also show the direction for the rotating.

IV、 Ground mark



this sticker place on the left side of the back of the machine, to show where to connect the ground wire.

V、 Trademark



this mark place on the machine body, in the middle part,

VI、 Model



this sticker in front of the machine, and also under the trademark on the wheel lifter, the write line on the left side is only for decoration, the word is the machine model.

VII、 The original data



this mark is under the nameplate on the back of the machine body, or on the front or left side for the inside machine body. (some machine only put them inside the body). These three data is input before the delivery after the calibration (save in the CMOS chip), that is for the reference for the user later.

3) Appearance of wheel balancer



4) Performance and feather

*The machine adapt the center computer system of import parts, high intelligence, high duration.

*Main shaft use importing bearing, low noise, high precision.

*Advanced computer driving system.

*Automatic calibration function of static and dynamic.

*Three ALU program.

*Self calibration and Self-diagnosis

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NO	Item	Technical data	Note
1	Kind for rim	Alu, steel and alloy rim	
2	Balancing class	car, light truck, Super truck and passenger tyre	
3	Balancing mode	Dynamic, static, and three ALU	

4	Driven style	Driven by electrical	
5	Power supply demand	230V 50Hz	
6	Style for put the weight	Standard	Suit for different style
7	Measure for inside and outside	Standard	Suit for every model
8	The machine start when low down the cover	Semi-automatic	low down the cover, and press the START button
9	Quick handle nut	Standard	
10	Caliper/weight/handle	Standard	
11	Change for millimeter and inch	Standard	
12	Change for gram and ounce	Standard	
13	Calibration	Standard	
14	Self- diagnose /show Err-	Standard	
15	Wheel lifter	Used for truck tyre	Car balancer not use this
16	Brake	Automatic/Manual	
17	Brake	Automatic/Manual	Brake
18	Display cover	Packed separately	
19	Display panel	<u>LBD</u>	
20	Distance setting	Manual	
21	Cone	5	
22	Balancing time	7s (16" standard rim)	Relative to wheel weight
23	Max. balancing speed	230r/min	Relative to wheel weight
24	Balancing precision	≤3g	
25	Max.wheel width	20"	
26	Max.wheel diameter	47"	
27	Max.rim diameter	10"~24"	
28	Max.rim width	1. 5"~20"	

29	Max.wheel weight	150kg	
30	Dimension (after packing)	1320X950X1180 (LXWXH)	
31	Machine weight	274kg	Include wheel lifter
32	Temperature	0~40℃	
33	<u>Hmidity</u>	≤75%	
34	Noise	≤70dB	
35	Resistance	≥20MΩ	
36	Power	About 800W	

2. The use of wheel balancer

1) Precaution in transport the machine

- A. Be careful when transport and unpack the machine, to avoid the damage of the machine.
- B. Check if the machine is damage or not during the transport, and make the record for the problem, then show them to the carrier, and make the record on the document.
- C. Check the structure for the machine, to see if the data on the machine's nameplate and motor's nameplate is the same as demand, if have doubt, Reflect it quick, so that can make the resolution for this in time.
- D. All the work about electricity and adjustment must be operated by the authorized person.

2) Demand for install the electrical device

- A. Demand for the electrical wire. Before the install, make sure the power supply is the same as the machine demand, the wire of the machine can not connect with the power supply directly, a breaker should be used, to avoid the damage of the machine when the power is not stable, normally, a 15A breaker (with overload protect and less load cut off) is recommended, if a bigger breaker is used, the fuse should be installed, the lead wire area

can not less than 1.5mm² (earth wire can 1.0mm²),oil-against cable can be used, (built on stilts or insert into hose), or monolayer insulate wire can be used through wire groove or pipeline. If the working site is not good, much equipment, vehicle and people go through, the wire should be built on stilts or cover up.

B. Demand for the power supply. The voltage should be stable, the wire should have overload ability, fluctuate of the voltage should not exceed the rated voltage 10%, fluctuate of the frequency should not exceed 1Hz, or the regulator should be mounted, to keep the voltage and frequency stable.

C. Demand for the socket. The car balancer is equipped with the wire and plug before delivery, the operator can only choose the socket according to the plug, but the socket must apply for the following demand:

- I the rated capacity should more than 500VA, rated current more than 15A;
- II the socket must have reliable earth wire, the socket with only two clamp can not be used, or it will affect the precision of the balancer and ability of anti-jamming.
- III it better with the switch, if there is something wrong with the wire, can cut off the electricity or it will damage the machine
- IV The plug should connect well with the socket.
- V It is better use the special socket, do not use many equipment on the same socket.

3) Air connection

A、 Wheel lifter technical data:

Working range: 0.1~0.8MPa (0.5~0.8Mpa in normal working)

Precision: 0.01MPa

Air supply: this machine is not equipped air supply, the customer need to equip the air supply themselves, it should be control within0.6~0.9Mpa, then adjust to below 0.8Mpa by the valve on the lifter, the air supply should have filter, the precision should 5 μ m ;

medium flux $>0.15\text{m}^3/\text{min}$, temperate $5\sim 60^\circ\text{C}$. The lifter equipped with quick union, $\Phi 8$ (inside) hose should be used to connect with the air supply, then tighten it by caliper.

Working condition: according to the demand for the balancer

Net weight:50Kg

Dimension:1129×1190×728mm (LXWXH)

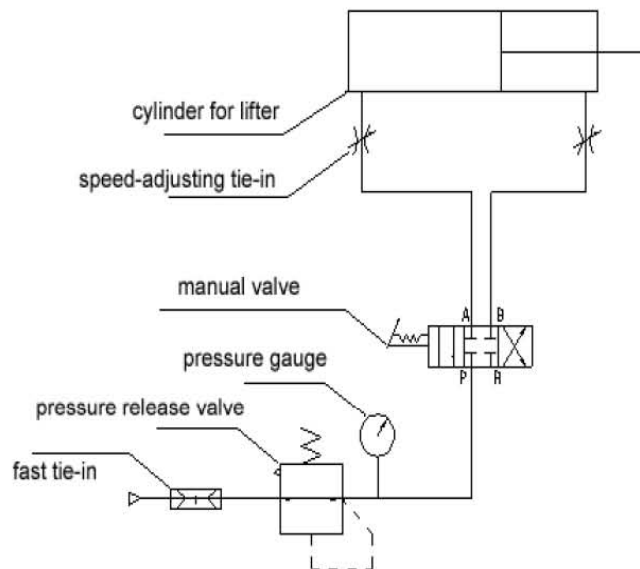
B、 Unit conversion

1Mpa=10Bar

1Bar=14.5Psi

1Bar \approx 1Kg/cm²

B、 Pneumatic diagram(right)



4) Precaution in installation and operation

*Don't place the detector in an extreme hot or cold condition, and avoid setting the machine close to the heating radiator, tap, air humidifier and stoves.

*Don't place the detector near the window under the direct sunshine .In case of inevitable, the window curtain, shield and hood should be used to shade the detector.

*No contact of the machine is allowed with dust, ammonium, alcohol, diluents and pulverized adhesive, etc.

*The detector should be installed on a leveled ground.

*Never place it close to the air compressor or any substance that may generate vibration.

*During the operation don't close to the detector unless the operator.

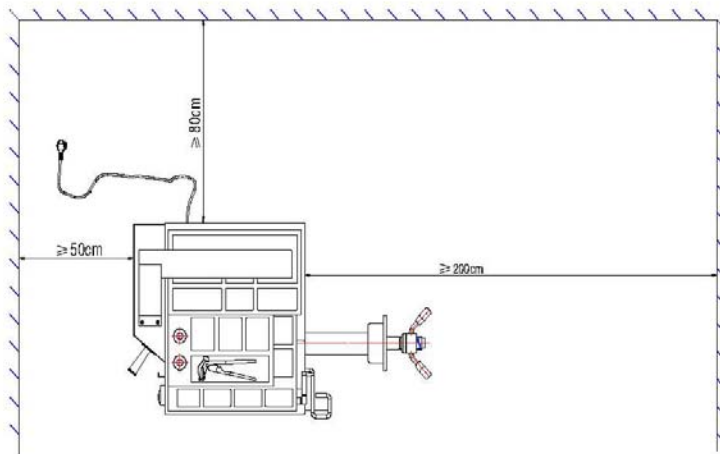
*The dynamic balance detector should use separated power(230V) socket. Don't connect

any other wire in this socket. Attention must be paid to the reliable grounding, if there is no grounding connection in the socket, it must be added before connect with the power source.

*The wire line of dynamic balance detector should be prevented from stepping on.

*Contact with the special service man for maintenance before you have to move the dynamic balance detector.

** At least 80cm should be left at the back of the machine, 50 cm on the left side of the machine should be left, to ensure the aeration ,disperse and the normal work, 200 cm on the right side of the machine should be left, to facility the mount and demount the tyre or mounting the lifting device.



*The lifting device should be used when the tyre is more than 15kg, not use hand to lift tyre directly, to avoid the injury of the operator.

* Fix the machine on the ground by bolt before operate the machine, (fix three points),or the result may not correct due to the shake of the machine, especially when the tyre more than 35kgs.

*The machine equipped with the protection cover and the switch, the motor automatically start when the cover low down, and will stop when lift up the cover, in order to ensure your safety, do not demount the cover.

*The operator should wear the clothes –fitting, tighten the button, wear the thin gloves, the thick gloves will affect the operation, do not wear sandal, it is better to wear insulated

shoes.

* Around the balancer, there should be no other electrical equipment, or the machine with big power, to avoid the electromagnetism interrupt the testing precision.

*If the ray not good for the working site, the lighting device should be prepared, it is better to use daylight lamp or incandescence clamp, brightness should fit for the working.

5)Call your attention to the following problems

*Never dismount or refit the dynamic balance detector by yourself.

*The part of rotational shaft should be prevented from any strike.

*The dynamic balance detector can be restarted only 5 seconds later after shut down.

*On the top of dynamic balance detector never put many heavy substances.

*Please refer the content of self-calibration in case of abnormal operation .Cut off the power supply and pull out the plug immediately, if the noise, smoke or any other accidents take place suddenly, then inform the relevant service man.

*In front of the power socket of the dynamic balance detector, space must be left so that you can rapidly pull out the plug.


*The dynamic balance detector can't be used beyond the scope of its functions stipulated in the manual.


3. The Brief Description Controlling Panel


A、 Panel instruction



a. b.  Value display indicator.

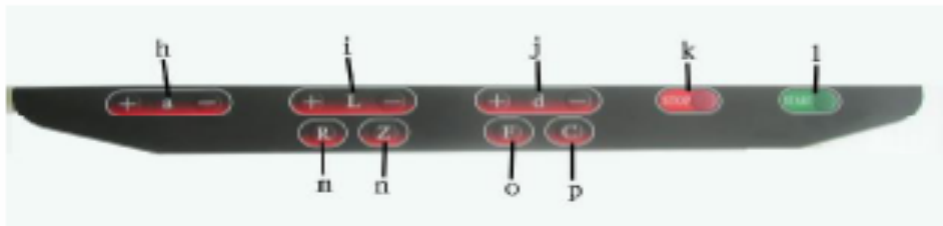
c. d.  Positioning lamp for unbalance point.





 When the indicator lighting, the machine in the position work for big tyre.

 When the indicator lighting, the machine in the position work for small tyre.





e.  Balancing block mode indicating lamp.

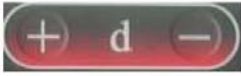



B. Instruction for the button



a.  Width setting button. Press down  or  

to adjust the set width value on indicator

i.  Distance setting button. Press down  or 
to adjust the set distance value on indicator 

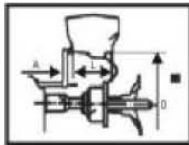
j.  Dia setting button. Press down  or 
to adjust the set Dia value on indicator 

4.1.2 Lifting the tyre

The lifter should be used to lift the tyre, when the tyre more than 15kg. Roll the tyre to the lifter (the tyre edge should be 10 cm from the shaft edge, avoid the damage to the shaft during the operation). Hold the tyre one hand, the other hand adjust the valve, (turn clockwise the lifter is lifting, turn anti-clockwise the lifter is down,) check the center position of the tyre, when the tyre center match to the shaft, stop the valve in the center position, push the handle to make the tyre in the shaft, not damage the shaft.

Note: after testing, demount the tyre, low the lifter to the lowest point, stop the valve in the center position

4.1.3 Mounting of tyre



Select the positioning cone that fits the central hole of the rim, to install it at the center of rotational shaft, then tighten and lock it with the handle nut.

(The maximum weight of wheel should not more than 150kg.)

4.1.4 Input the value "A"



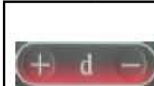
Pull the distance gauge A to the position, where the balance block is to be set. Press the **+** or **-** button near "a" and input the reading on the gauge into indicator b, meanwhile the indicator a should display the value as "A".

4.1.5 Input the value "L"



Use the width gauge that taken from the accessories to measure the width between two sides of the rim, press **+** or **-** button near "L" to input the reading on the gauge into the indicator b, mean while the indicator a should display the value as "L".

4.1.6 Input the value "D"

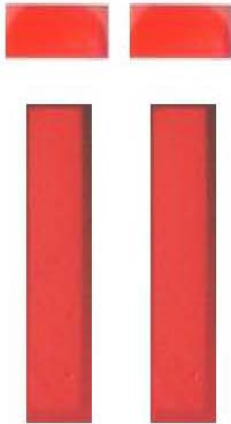


After the value of Dia. confirmed, press **+** or **-** button near "d" to input the value into the indicator b, meanwhile the indicator a should display the value as "D".

4.1.7 Pull down the protection cover, press the  button to start the operation; several seconds later, the detector will automatically stop.

4.1.8 After stopping, the value of unbalance for internal and external displayed by indicators a and b. Rotate the wheel by hand, the positioning lamps c,d will constantly flash, c indicate the internal

unbalance value, d indicate the external unbalance value.



4.1.8 Run wheel till all lamps in a set of c or d start to light, it means that the position of rim's highest point is the unbalance point. Among which the d represents the value of internal side of rim and the c represents the value of external side of rim

4.1.9. At the unbalance point of the rim, mount a balance block corresponding to the measured value, the indicator a represents internal side of the rim, while the indicator b represents the external side of the rim.

4.1.10 Repeat the procedure 6-10 till the indicators a and b show "00".

4.1.11 Dismount the tire from the rotational shaft, the balance detection is now finished.

4.2 Several unit conversion

(1) "inch" and "mm" conversion

"inch" and "mm" conversion in the rim "L". In "L" display, the unit of display is "inch", if you want to use "mm", you can converse them. Converse method: first press "STOP" button for long time, at same time press "+" button or "-" button near "L" you can get it.

"inch" and "mm" conversion for rim width after conversion, the display unit is "mm"

(2) "inch" and "mm" conversion for rim diameter.

The display unit is "inch" in normal condition. When use "mm", you can converse from "inch" to "mm".

The conversion method: first press "STOP" button for long time, at same time press "+" button or "-" button near "d", you can use "mm" unit.

Turn off the machine, and "START" the machine again, The unit for rim width diameter is inch.

(3) "gram" and "ounce" conversion

The display unbalancing value's unit is gram, when use "ounce", you can converse from "gram" to "ounce".

The conversion method: first press "STOP" button for long time, at same time press "+" button and "-" button near "a", you can use "ounce" unit. Turn off the machine, the machine will remember the unit, if you want recover the "gram" you can repeat the about operation.

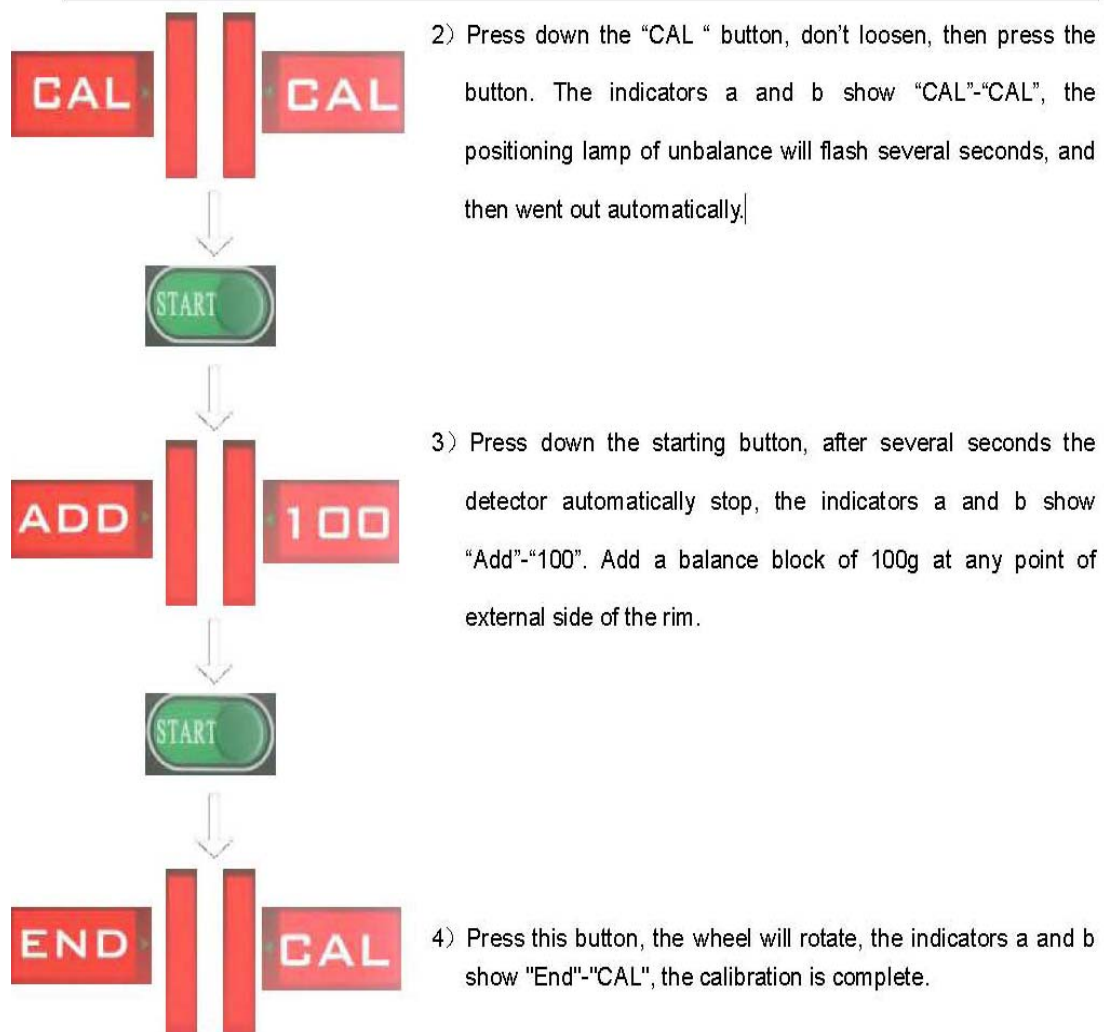
5. Self-calibration

When there is doubt in the precision of the measured value this function can be used. Don't shut down the detector during the operation, because it may cause the inputting of the wrong value. (Don't arbitrarily use this function)

Procedures in operation:

1) Mount the balanced tyre.





6 Selection of functions



This lamp lighting shows that it is adapt to the type used for motorcycle, or those wheels at both sides of which placing the balance block is not allowed.



This lamp lighting shows that it is adapt to the alloy rim, at the shoulder of which the balance block can be stuck on.



This lamp lighting shows that it is adapt to the alloy rim, on the external hidden side of which the balance block can be stuck on.



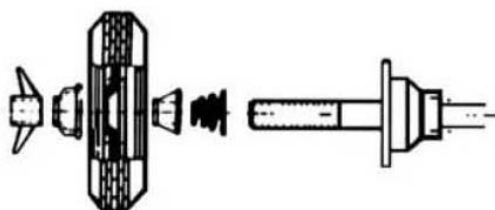
This lamp lighting shows that on the external side of which the balance block can be stuck on, and at the internal side of the rim, the balance block can be braced or inserted.

When the four sets of indicators all went out, it shows the standard balance. (Whenever you start the detector, the computer automatically set at such state.)

7.Code in Computer Self-diagnosis

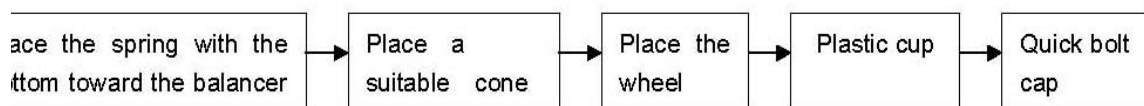
Err	-1-	Trouble in phase generator or power board, phase board is damaged or phase connecting line is break.
Err	-2-	Rotation speed is too low or wheel hasn't been mounted (with tire).
Err	-3-	Too big unbalance, try other wheel
Err	-4-	Errors in power system, rotation direction is not right.
Err	-5-	Nonsense.
Err	-7-	Memory damaged or signal lost, calibrate again or renovate.
Err	-8-	The procedure of calibration is not appropriate or computer board or sensor damaged, sensor connecting line is damaged, power have no -5v.

8.Wheel Shaft Counter positioning



Counter positioning method is widely used in the foreign countries. It is applicable to common steel rims and aluminum alloy rims. Especially for the new rims of type 2000, and provides high balance precision.

Procedures of counter positioning:



9. Standard accessories of Tire Balance Detector



Positioning cone for axis



Calipers



Plumb100g



Locknut



flange



Counterweight nip



Pin-Accessory

.Standard accessories (List)

*Counterweight nip	1Piece
*Caliper	1Piece
*Positioning cone for axis	5Pieces
*Plumb 100g	1 Piece
*Spring	1Piece
*Flange	1Piece
* Pin-Accessory	3Piece

10. Trouble shooting
















Symptom	Cause	Solution
No display on the screen after starting	1.External power malfunction. 2.Power board malfunction 3.Loosen connection between computer board and power board. 4. Computer plate malfunction.	1.Check the external power supply 1. Replace the power board. 2. Check the plug of the connecting line. 3. Replace the computer board.
The display is normal, but the starting switch and the inputting button heads a,L,d is malfunction	1.The connection of the switch is not well. 2. Dead computer.	1.Open the cover and tighten the plug of the touch switch. 2. Start the machine again.
The display is normal, but the brake does not work.	1..Loosen connection between computer plate and power plate. 2.Power plate malfunction. 3. Computer plate malfunction.	.1.Tighten the connecting line between the computer board and the power board . 2. Replace the power board . 3. Replace the computer board .
The starting is slow with failure in braking and imprecision in balance.	Driving belt is too loose.	Adjust the position of the motor or change the driving belt.
The operation is normal, but the balance value is not accuracy.	1.The body of machine is placed unstably. 2.Affected by the cone or quick bolt cap. 3.The wheel is not mounted tightly. 4.The power supply inside the machine is unstable. 4. Power voltage fluctuate violently. 5. The calibration value changed. 7. The value inside the machine changed.	1.Get rid of the problem, according to the testing result. 2.Re-tighten the quick bolt cap. 3.Check the power supply. 4.The operator can adjust the power supply by itself. 5.Replace the computer board if necessary. 6.Re-calibrate it according to the User's Manual. 7.Input the data of dis,In-I,SFA again, according to the marks on the machine, then calibrate it again to check if the machine work normally.

Note

1. The wheel balancer must fixed after taking from the package.
2. Must have earth line.
3. Prohibit to move the main shaft and avoid any crack.
4. Wet proof and shake proof.
5. Advise to use stable power.

11.Presetting the stored 3 items data:

Note: this function can only be used when the balance data is not accurate, even after the calibration the data still not accurate or stable. When adjust this 3 data, the 100g weight must be moved away. The calibration must be done after setting each one of the three datas to make the computer memory the resetting data, or there will be no effort for this function. Move away the weight tray, and see the original data marked on the inside of the machine for setting.

-
- 1) **Adjust the SFA data:** After the calibration, if the 100g weight is not directly under the wheel spindle (six o'clock position) or the data is not correct, this function can be used to know the offset degree of the weight. Move this weight, and press the  and  buttons, nine seconds later the indicators will stop flashing, press  button of "a" value, then press the  button of the "a" value quickly, when all the indicators went out, press the  button, the left screen display "dis", the right screen display the readings, it is not necessary to pay attention to this, press again the  button of the "a" value, (at this time the  button represents going into the next program) the "In-I" on left will display, the right screen display the reading, then press the  button of the "a" value, it will go the SFA window, the right screen display the reading of the position where the 100g weight located. If it need to change the reading, press the  or  buttons of the "L" value to adjust the offset degree of the 100g weight, then press the  of the "a" value to exit. do the calibration again, sometimes it is necessary to adjust the SFA reading again and again, till the 100 weight directly under the wheel spindle
 - 2) **Adjust "dis" reading:** this function used for solving the problem of inside unbalancing value. Balance the wheel and place 100g weight on the outside of the tire, the reading on the screen will display in the range of 104-96, take the 100g weight and place it on the inside of the tire, after stop, the reading is in the range of 104-96, which means normal. If the reading is not between this, the operator should adjust the "dis" value. the method for finding the "dis" reading is the same as the way for finding the SFA reading. (adjust the  and  buttons corresponding to "L" button), after the adjustment go back to the original position, then do the self-calibration again.
 - 3) **Adjust the In-1 reading:** this function can solve the problem of the divided reading (inside and outside). If place a 100g weight on the inside of the tire, the inside screen display 90g, the outer screen display 10, this function can be used, after the self-calibration go into the In-I program of adjusting the stored reading. The method for finding the In-1 reading is the same as the way for finding the SFA reading, according to the inside reading to increase or reduce the In-1 reading (adjust the  and  buttons corresponding to "L" button), if the reading more than 110g, it is necessary to reduce this item and exit. then go back to the original position and do the self-calibration.

12 Use for grease

12. 1 Grease the balancer

The rotating part for the balancer is only the motor and the balancing shaft, so only the bearing for these two part need greased, the operator can check the bearing periodically. If the machine used often (more than two hours one day), the bearing should be check annually; if the machine not used much, it can check every two year. (the bearing can not be open for testing, the screwdriver can gore up on the bearing, then hear the sound, to test it) The bearing is the block out bearing, so the grease not easy to change and out,

also the rotate speed is not high for the machine itself, so it is not necessary to change the grease. If feel the bearing work abnormal or there is some noise, the bearing can be changed. If the customer confirm not change the bearing, just change the grease, then demount the bearing, open the dust ring, add the grease(XHP103), all these work must under the guide by the professional person, the machine must be calibrate after change the bearing, if the bearing not change well, it will affect the precision of the machine, then put the dust ring, mount the machine and readjust.

In addition, the lifter cylinder use mixture grease, HD30 XHP222, the grease with well sealing, the working frequency is not high, so it is not necessary to change the grease often, but must make sure the quality of the air supply.

12. 2 Safety data list for use of grease for balancer

A. Safety data list for grease

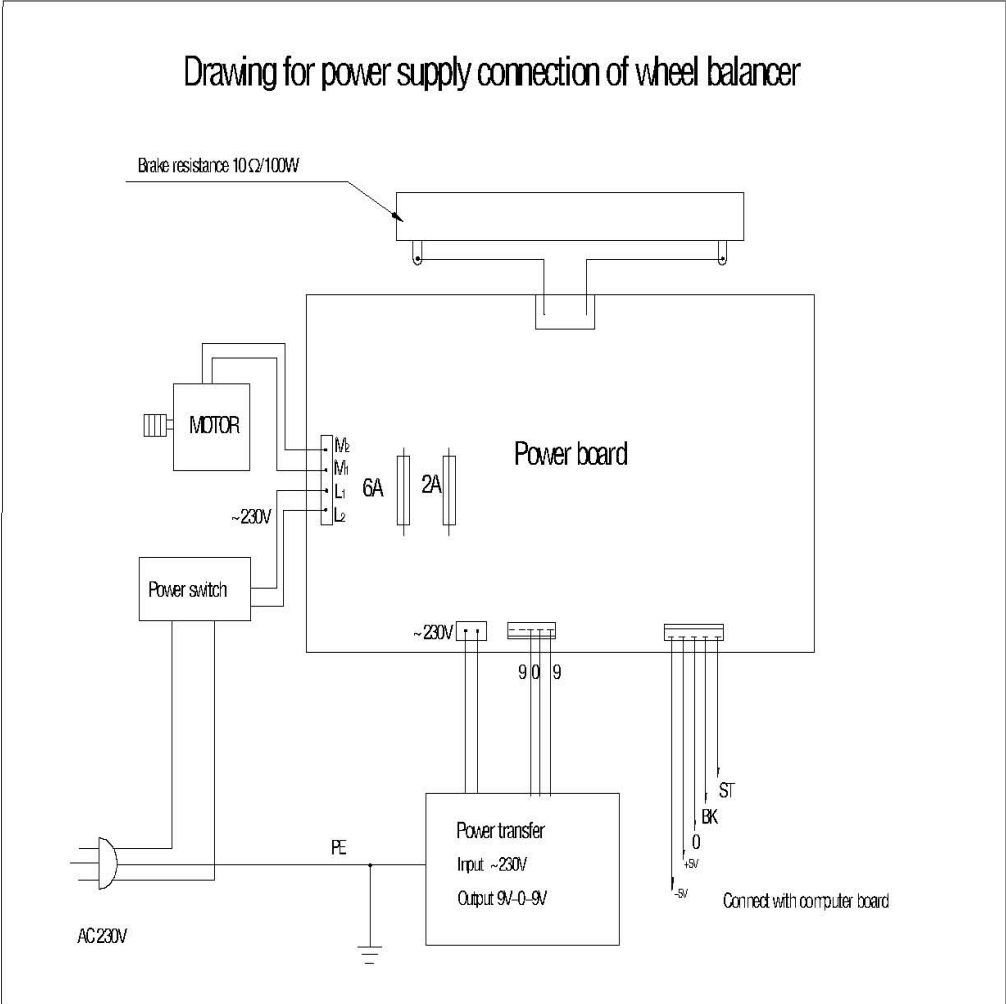
XHP (Mobilgrease XHP)	103	222
NLGI Grade	3	2
Thickener Type	Li-Complex	Li-Complex
Color, Visual	Dark Blue	Dark Blue
Penetration, Worked, 25°C, ASTM D 217, mm/10	235	280
Dropping Point °C, ASTM D 2265	280	280
Viscosity of Oil ASTM D 445, cSt 在 40°C	100	220
Penetration Consistency Change ASTM D 1831, mm/10	10	- 8
4-Ball Wear Test ASTM D 2266, scar, mm	0.5	0.5
4-Ball Weld Load,ASTM D 2509, Kg	315	315
Timken OK Load,ASTM D 2509, lb	45	45
Bomb Oxidation,ASTM D 942, Pressure drop at 100 hrs, kPa	35	35
Corrosion Prevention,ASTM D 1743	pass	pass
Emcor Rust, IP 220, Acidic Water	0	0
Rust Protection,IP 220-mod, Distilled Water Washout	0	0

Copper Strip Corrosion., ASTM D 4048	1A	1A
Water Spray Resistance.ASTM D 4049, % Spray-off	15	15
Water Washout.ASTM D 1264, (wt%) loss, @79°C	5	5

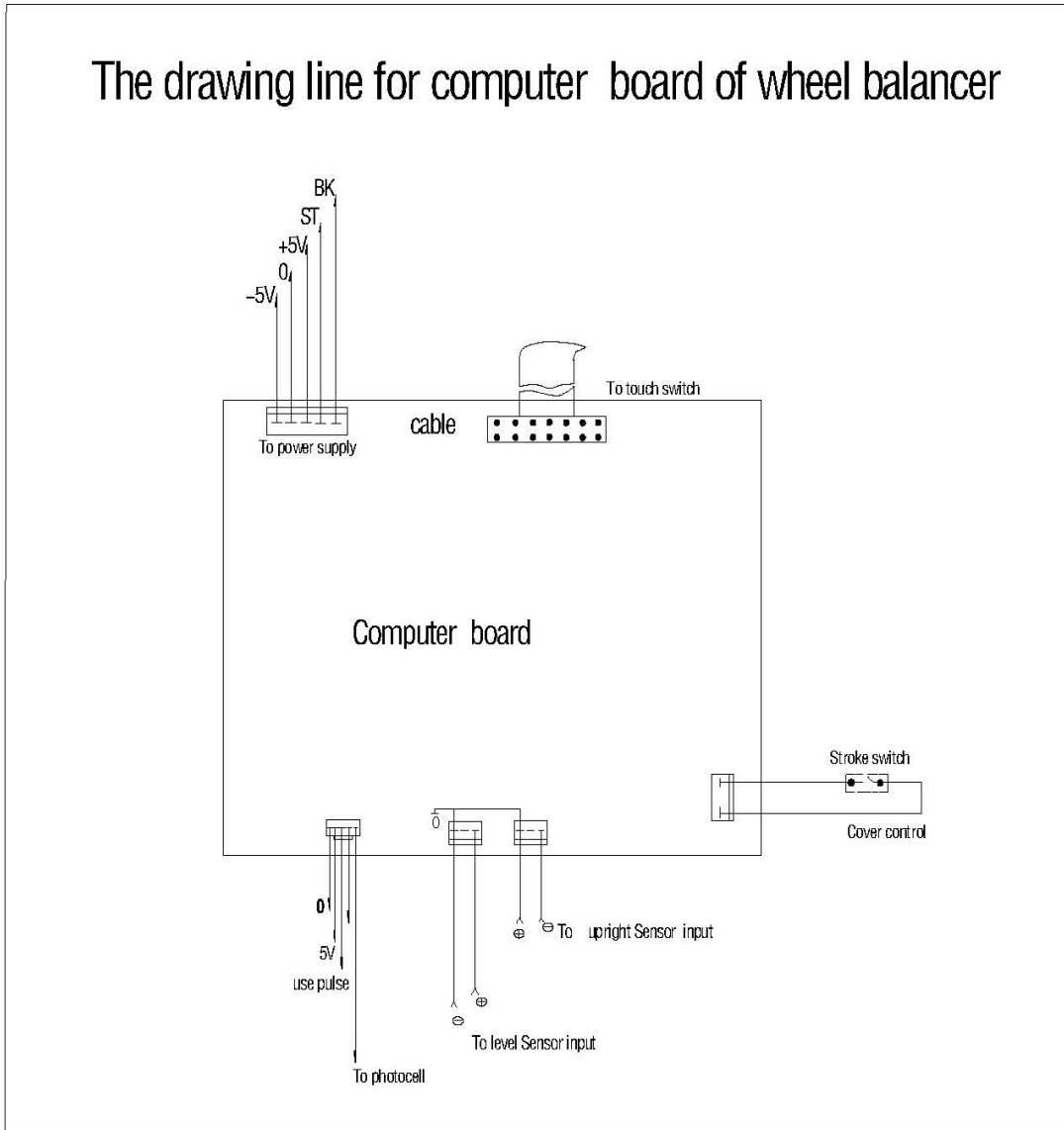
B. Safety data list for oil

Mobiltrans HD	30
SAE Grade	30
Viscosity,ASTM D 445	
cSt @ 40°C	100
cSt @ 100°C	11.2
Viscosity Index, ASTM D 2270	97
Pour Point,°C, ASTM D 97	-18
Flash Point,°C, ASTM D 92	224
Density @ 15°C kg/l, ASTM D 4052	0.893

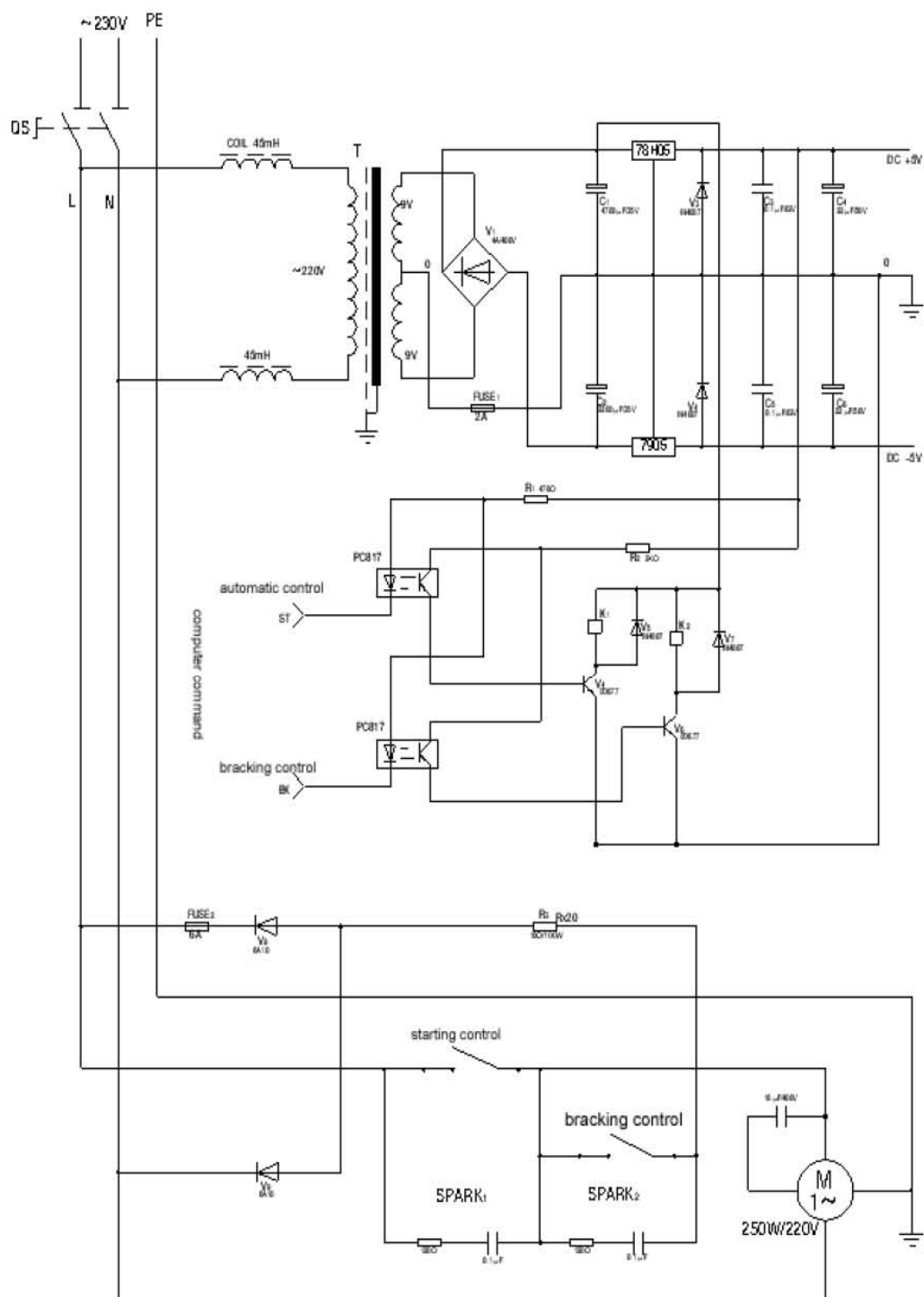
13.The Drawing Of Power Board



14.The Drawing Of Computer Board



15. Electrical diagram



NOTE: K₁-12V STARTING RELAY; K₂-12V BRAKING RELAY

16. Spare part list

NO	Description	Q'ty	Model	Part
1	Bearing	1	6005Z	On the fixing shaft
2	Bearing	1	6006Z	On the fixing shaft
3	Bearing	2		On the shaft for the motor
4	Fuse	1	2A	Power poard
5	Fuse	1	6A	Power poard
6	Lock nut	1		Thread rod
7	Computer board	1		In gthe main body
8				
9				
10				