

WHEEL BALANCER

USER MANUAL

■ Pls read this manual before operation

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1. PREFACE

WARNING

During this period, the manufacturer will repair or replace the parts returned or the machine itself, sustaining the costs but not accepting responsibility for normal wear and tear, incorrect use or transportation, or failure to carry out maintenance. The manufacturer will not inform the customer about any improvements to the products or the upgrading of the production line.

INTRODUCTION

The purpose of this manual is to provide the owner and operator of this machine with a set of safe and practical instructions for the use and maintenance of the wheel balancer. If such instructions are carefully followed, the machine will offer you the levels of efficiency and duration.

The following paragraphs define the levels of danger regarding the machine.



DANGER: Refers to immediate danger with the risk of serious injury or death.



WARNING: Dangers or unsafe procedures that can cause serious injury or death.

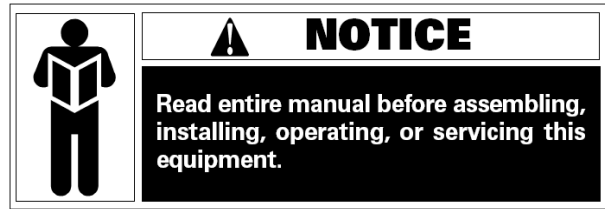


ATTENTION: Dangers or unsafe procedures that can cause minor injuries or damage to property.

Read these instructions carefully before using the machine. Keep this manual and the illustrated materials supplied with the equipment in a folder near the place of operation so as to allow the machine operators to

consult the documentation at any time.

The manual is only to be considered valid for the machine serial number and model stated on the attached nameplate.



The instructions and information described in this manual must always be complied with: the operator will be held responsible for any operation not specially described and authorized in this manual.

Some of the illustrations contained in this booklet have been taken from pictures of prototypes: standard production machines may differ slightly in certain respects. These instructions are for the attention of personnel with basic mechanical skills. We have therefore condensed the descriptions of each operation by omitting detailed instructions regarding, for example, how to loosen or tighten the fixing devices. Do not attempt to perform operations unless properly qualified or with suitable experience. If necessary, please contact an authorized Service Centre for assistance.

INSTALLATION



Take the utmost care when unpacking, assembling, lifting and setting up the machine as indicated below. Failure to observe these instructions can damage the machine and compromise the operator's safety. Remove the original packing materials after positioning them as indicated on the packaging.



All regulations in force concerning safety at work must be complied with when choosing the installation

position. In particular, the machine must only be installed and operated in protected environments where there is no risk of exposure to water or liquids.

IMPORTANT: for the correct and safe operation of the machine, the lighting level in the place of use should be at least 300 lux.

Environmental operating conditions must comply with the following requirements:

- relative humidity ranging from 30% to 80% (without condensation);
- temperatures ranging from 0° to +50°C.



The floor must be strong enough to support a load equal to the weight of the equipment plus the maximum load allowed.



The machine must not be operated in potentially explosive atmospheres.

SAFETY REGULATIONS



Failure to comply with the instructions and danger warnings can cause serious injuries to the operator or other persons.

Do not operate the machine until you have read and understood all the danger/warning notices in this manual.

The correct use of this machine requires a qualified and authorized operator. This operator must be able to understand the manufacturer's written instructions, be suitably trained and be familiar with the safety

procedures and regulations. Operators are forbidden to use the machine under the influence of alcohol or drugs that could affect his/her physical and mental capacity.

The following conditions are essential:

- read and understand the information and instructions described in this manual;
- have a thorough knowledge of the features and characteristics of the machine;
- keep unauthorized persons well clear of the working area;
- make sure that the machine has been installed in compliance with all relevant standards and regulations in force;
- make sure that all machine operators are suitably trained, that they are capable of using the machine correctly and safely and that they are adequately supervised during work;
- do not touch power lines or the inside of electric motors or any other electrical equipment before making sure that they have been powered off;
- read this booklet carefully and learn how to use the machine correctly and safely;
- always keep this user manual in a place where it can be readily consulted and do not fail to refer to it.



Do not remove or deface the DANGER, CAUTION, WARNING or INSTRUCTION decals. Replace any missing or illegible decals. If any decals have become detached or damaged, it is possible to obtain them from your nearest reseller.

-Observe the unified industrial accident prevention regulations relating to high voltages and rotating machinery whenever the machine is in use or being serviced.

- Any unauthorized changes or modifications made to the machine automatically release the manufacturer from any liability in the case of damage or accidents resulting from such changes or modifications.



Meaning of the decals (including the one indicating caution)



Lightning symbol This decal, positioned on the back of the machine, indicates where to insert the power supply cable and warns the user to pay attention to his safety.



Warning for rotating machine part This decal, positioned next to the balancing shaft, reminds the user that this is a rotating part and is therefore dangerous and should not be touched with the hands. The arrow indicates the rotation direction.



Grounding symbol This decal, positioned on the back of the machine, indicates where to insert the power supply cable and warns the user to pay attention to his safety

2. INSTALLATION & OPERATION

Before installation and use of the wheel balancer, you should carefully read this installation and operation manual. The manual should be kept for future reference. Operators should be familiar with this instruction manual to ensure correct operation and safety.

ATTENTION:



WEAR PROTECTIVE GLOVE



READ OPERATION MANUAL



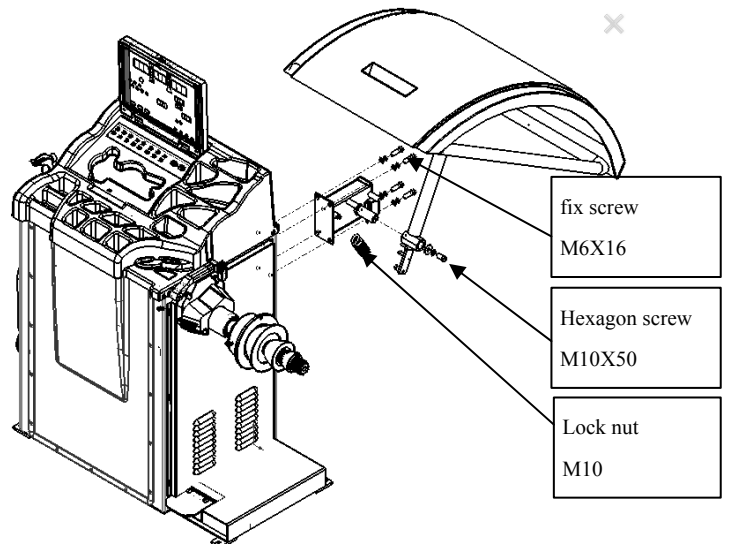
WEAR PROTECTIVE GLASSES



POWER OFF THE ELECTRICAL SOURCE OF THE MACHINE DURING MAINTANCE

2.1 PROTECTIVE COVER INSTALLATION

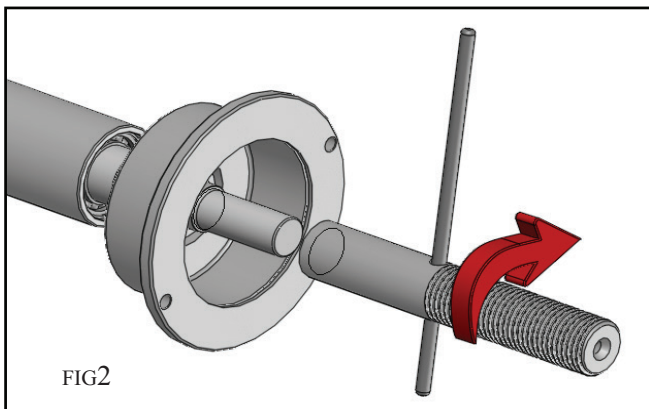
Install the protective cover before using. Connect the protective cover according to the FIG1.



As shown of the above figure, slip the protective cover into the protective cover support tube and insert the socket head screw M10X50. And then lock the locknut along the reverse direction and loose the 2 hexagon nut to tight the socket head screw., This can prevent the protective hood from shaking to influence the test.

2.2 MAIN SHAFT INSTALLATION

MAINSHAFT INSTALLATION: Before installation, use the ethyl alcohol and compressed air to clean up the center hole of the shaft and connect part. Use spanner and screw to fix the thread shaft on the balance shaft (Fig2)



2.3 ELECTRICAL CONNECTION & EARTHING

Note! According to the decal at the position of the connection between the power supply cable and the body of the machine, the jack of the power supply cable must be grounded with reliable earth wire.

All electrical connections must be carried out by a qualified electrician. Make sure the technical parameter shown on the machine is comparable with the power supply. This machine must be fitted with fuse and be grounded with the reliable earth wire. Install the automatic electrical leakage control switch. The voltage stabilizer is recommended to be installed in area supply voltage can not be guaranteed



WARNING

Any electrical connection to be carried out by a

qualified electrician and must comply with all standard regulations.

Any electrical connection must be accordance to the following:

- Power voltage on the data plate on the machine;
- Voltage decrease cannot exceed 4% of the rated voltage on the data plate when fully loaded (10% at startup)
- Operators must
- Install the plug;
- It is recommended the machine is installed with a 30ma circuit breaker;
- Install the power supply cable fuse;
- Supply the effective electrical device in the workshop

-To prevent the unauthorized use of the machine, When you do not use the machine , pull out the power supply plug to prolong the life of the machine

- If machine directly connect with the power supply via power supply card not by plug, it will be operated by the qualified person.



WARNING

Perfect ground is necessary for the correct operation. Do not connect the machine with air pipe, water pipe, telephone line and the other unsuitable objects.

3. TECHNICAL FEATURES

3.1 FEATURES:

- It must be ensured the machine is grounded correctly to earth. If not, contact your local distributor.
- Low noise, wear resistant bearing for high precision.
- Computerized wheel balancer with dynamic, static, multiple ALU modes and STA mode for motorcycle.
- calibration and automatic trouble diagnosis
- Adopt quality computer featured with high intelligent and stable.
- When in urgent, press the stop key to realize the emergency stop.
- Features with the automatically static/dynamic balance
- 4 ALU modes and motorcycle mode

3.2 MAIN TECHNICAL SPECIFICATION

- rated voltage 230V/60Hz
- power 250W
- Average Balancing time 7S (20Kg wheel)
- accuracy $\pm 1g$
- noise $\leq 69dB$
- rim diameter 10"~30"
- maximum wheel weight 75kg
- rim width 1.5~20"
- net weight 159 kg
- max wheel diameter 47"
- working environment : temperature 0°C-50°C , relative humidity: $\leq 85\%$

3.3 WORK PRINCIPLE

The micro CPU will provide the normal information if it checks each unit in the normal situation. And the operators can execute the balance operation. When balancing, MCPU can control the rotation of the balancer tester main shaft through the drive interface. The unbalance signal sensed by balance sensor is sent to the micro-processor port through A/D converter. CPU will integrated analyze the unbalance signal and angle signal to calculate the unbalance value and display the value through the LED unit. We can realize the man-machine talk through keyboard and LED.

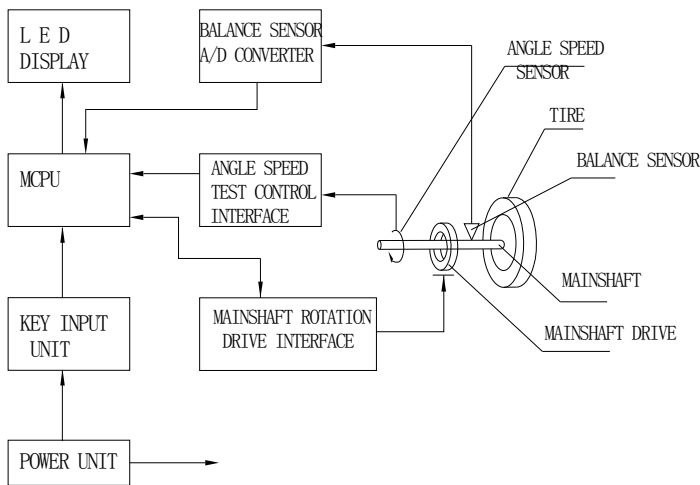


FIG 3 CB956 WHEEL BALANCER WORK PRINCIPLE

4. INSTALLATION & TRANSPORTATION

4.1 TRANSPORTATION

- Place, carry and store the machine according to the indication of the label on the packaging.
- Store environment: RH20%-95% temperature -10°C-+60°C
- When transporting or using the machine, do not lift or impact the shaft as it is to cause the permanent damage.

4.1.1 Ensure there is no external package damaging before unpacking the out of the machine.

Position balancer in a desired working position and ensure with the requirement of figure 4.

Environment temperature 0°C-50°C RH \leq 85% Installation position requirement as FIG5

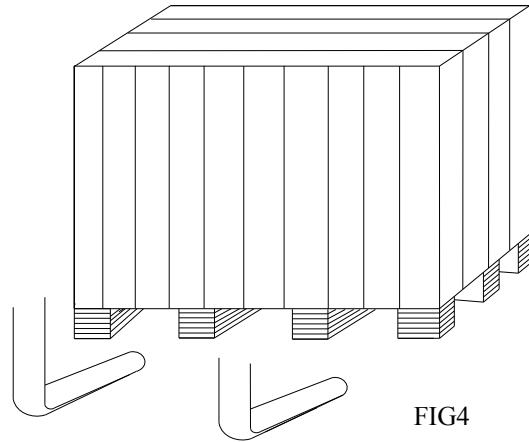


FIG4

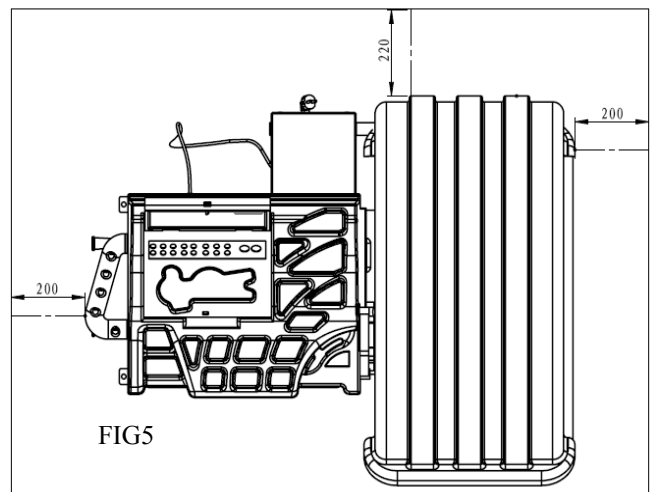


FIG5

4.1.2 Remove all packaging and check contents with below list of items. If any parts missing or damaged, please contact your distributor.

Packing material such as plastic, Polystyrene, nail,

screw, timber and carton must be placed into a scrap box and be handled in accordance to the local regulation and law.

4.2 INSTALLATION

Position the wheel balancer in the desired position for use. It must be ensured the floor is leveled and of solid construction. The wheel balancer is designed for operation indoors and should not be exposed to moisture or direct sunlight.

5. SAFETY PRECAUTIONS

5.1.1 Before operation, ensure you have read the instruction manual and all warning labels. Not working in accordance with the safety instructions should cause serious injury or death to the operator or bystanders.

5.1.2 Keep hands removed and loose clothing and jewelry and stand clear of all moving parts of the machine when in use. Inspect the machine before use for any damage. In the event of any damage, the machine must not be used

5.1.3 In the event of the emergency, you should press the "STOP" button immediately. To prevent injury, it must ensure the protective cover is fitted all time.

5.1.4 Before balancing, operators should check all the tyres and wheels for possible defects. Do not balance the tyres and wheels with fault.

5.1.5 Do not attempt to balance the wheel if it is to be found to be defect in any way.

5.1.6 You should wear properly, such as glove, goggle and working suit. You should not wear necktie, long hair and loosen clothing. The operator should stand beside the machine and the unauthorized person should be kept away from the machine.

5.1.7 Before balancing, you should ensure the mount of the wheel is proper. Before you start rotating the wheel, you should confirm the quick nut turn around the thread

shaft for less than 4turns and is firmly fixed on the main shaft.

GENERAL CONDITIONS OF USE



The wheel balancers described in this manual must be used exclusively to measure the extent and position of car wheel unbalances, within the limits specified in the technical data section. Furthermore, models equipped with motors must be provided with a suitable guard.



Any use other than those described in this manual is to be considered improper and unreasonable.



Do not start the machine without the wheel locking equipment.



Protective cover plays the role of prevention and safety.



Do not clean or wash the wheels mounted on the machine with compressed air or jets of water.



Get to know your machine. The best way to prevent

accidents and obtain top performance from the machine is to ensure that all operators know how the machine works.



Learn the function and location of all the controls.



Carefully check that all controls on the machine are working properly.



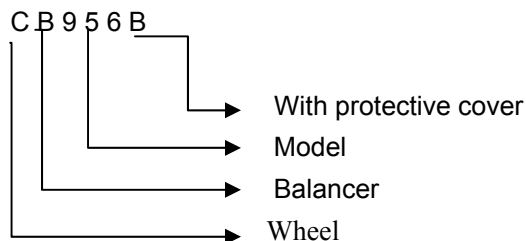
The machine must be installed properly, operated correctly and serviced regularly in order to prevent accidents and injuries.

NAMEPLATE



Model: CB956B	Serial No.: CB9568091601
Voltage: <input type="text"/>	Frequency: <input type="text"/>
Phase: <input type="text"/>	Input Power: <input type="text"/>
Current: <input type="text"/>	Weight: <input type="text"/>
Date of Manufacture: <input type="text"/>	

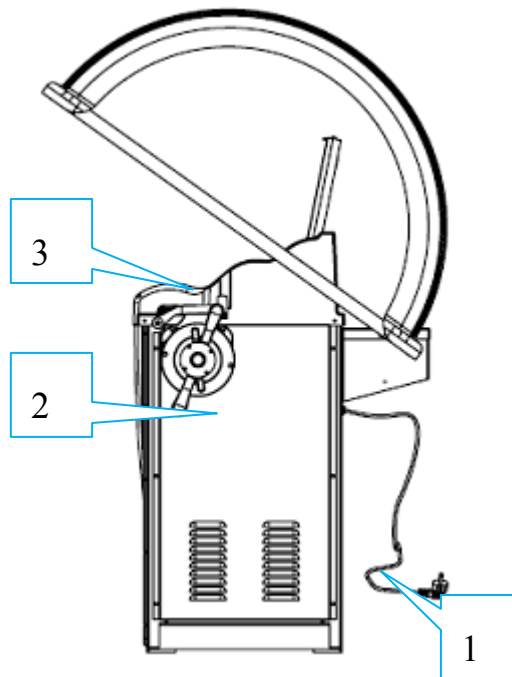
Note: The nameplate is stuck in the center to the top on the rear of the machine.

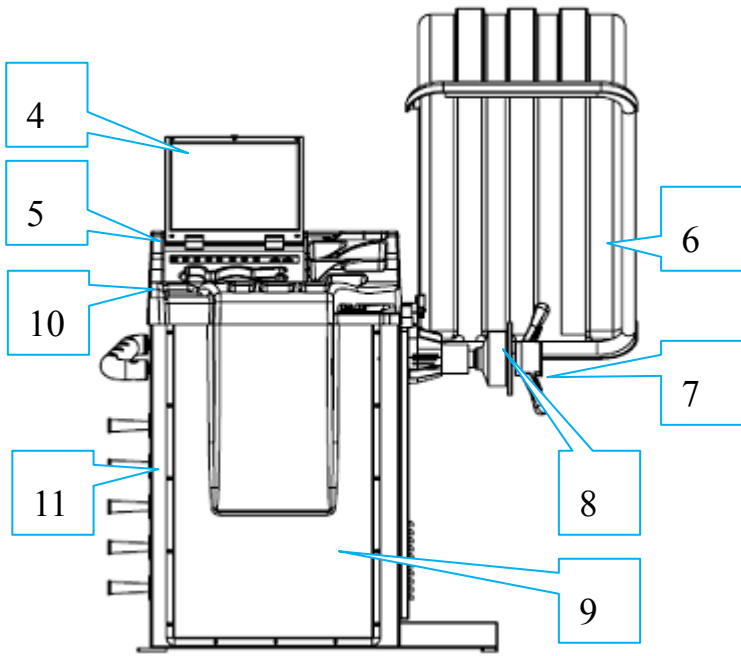


- B. CE mark indicates that this model of machine has CE certification.
- C. SERIES NUMBER: The first 3 digital is the abbreviation of the model of the machine and the middle 4 is the production date and the last 4 is the product series number.
- D. The content on the transverse line include the name and address of the company. The contents below the transverse line includes the rated electrical parameters of the machine such as voltage, frequency, power, phase and full load electrical current and the weight and the production date of the machine.

6. CONFIGURATION & USE

6.1 CONFIGURATION

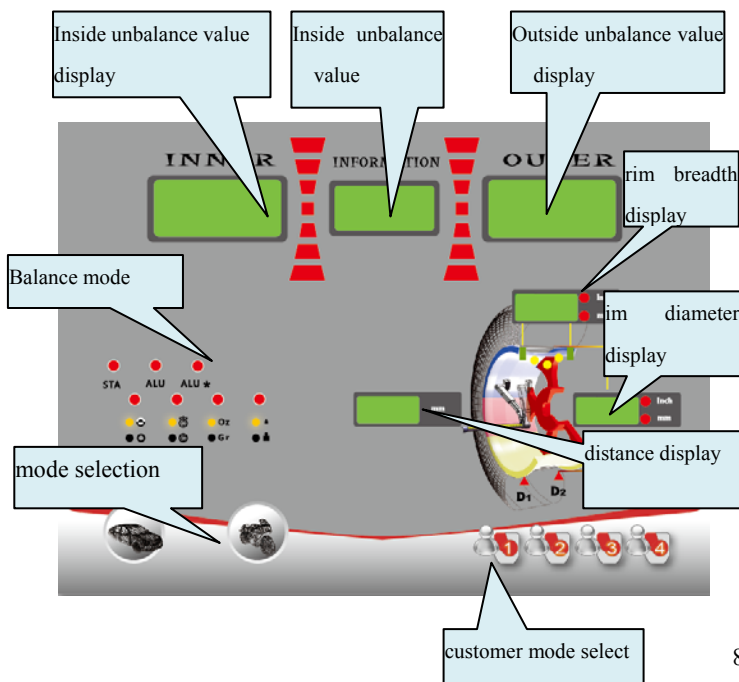



















- 1. Power plug
- 2. Side Panel
- 3. A-distance scale
- 4. Control Panel
- 5. Weight Tray
- 6. Protective Cover
- 7. Quick Nut
- 8. Balance Shaft
- 9. Body
- 10. Power Switch
- 11. Cone Storage Handle

6.2 DISPLAY PANEL & CONTROL PANEL

6.2.1 DISPLAY PANEL



	<p>In the state of parameter input, it is input key for the distance from wheel to the wheel balancer. You can change the distance set value of the window by press the up/down key. The default unit is mm.</p> <p>When use the automatic scale, it is no need for you to use this key and the machine will automatically access the distance from the machine to the tire.</p>
	<p>In the state of parameter input, it is the input key of the breadth of the rim. The default unit is inch</p>
	<p>In the state of parameter input, it is the diameter of the rim input key. You can change the rim diameter set value of the window by press the up/down key. The default unit is inch.</p> <p>When use the automatic scale, it is no need for you to use this key and the machine will automatically access the diameter of the rim.</p>
	<p>STA/DYN conversion key: The default boot mode is the standard dynamic balance. If you need to adopt the static balance, you can press this key to operate.</p>
	<p>ALU mode. Press this key one by one to realize the choice of the ALU1 \ALU2\ALU3 standard aluminum alloy mode.</p>
	<p>Self definite ALU mode. If cooperate with the automatic measure scale, you can realize the stick of the weight to the self definite position.</p>
	<p>Split weight: After you select the self definite ALU mode, you can realize the split of the weight. When the position of the weight is between the two spokes, you can hide the weight behind between the two spokes.</p>

	OPT: When you choose this function, you can realize the optimum of the rim, wheel and tire.
	MOT\CAR\BUS tire mode selection: to choose it in accordance of the type of the tire. MOT to balance of the motorcycle tire CAR to balance of the common tire BUS to balance of the heavy duty tire to realize the function of speed reduction and high efficiency.
	Residual unbalance value select key: Select this button to display the outside/inside residual unbalance value
	mm/inch conversion key for the diameter and breadth of the tire.
	Gr/Oz Unbalance value conversion key
	1、 program entrance key for entering into the program setup function 2、 confirm key for confirming the input result
	press key to stop the machine
	press key to start the machine

6.3 BASIC OPERATION

6.3.1 Switch on the main switch on the left side of the machine, the display will display “CB-953” and then “0”、 “0” (it will display “0.00”, “0.00” in ounce state)

6.3.2 MOUNT WHEEL Preparation before test:

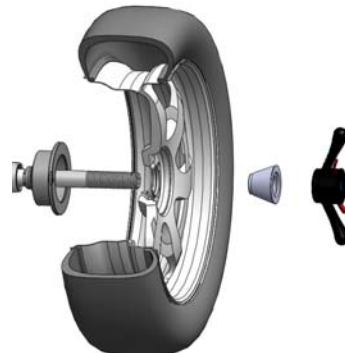
Check and clean the dust and mud and if there are foreign bodies, such as metal, stone, clipped weights on the surface of the tyre or wheel. And also check the air pressure of the tyre is according with the specified value. Check if there are deformation on the rim positioning surface and installation hole. Check if there are any foreign bodies in the tyre. Take off the original

weight.

The installation methods of the wheel: Positive positioning, negative positioning & flange disk. You can select different methods according to the practice.

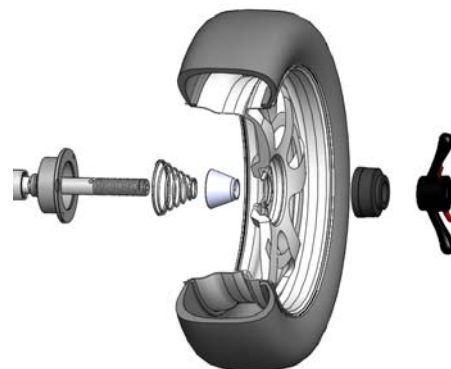
6.3.2.1 SMALL CAR WHEEL POSITIVE POSITION

Positive positioning is the normal method. It is featured with simple and quick operation. It is mainly suitable to the common steel rim and aluminum alloy rim with small deformation.



Main shaft → wheel (direction of the rim installation surface is inside) → cone → quick nut

6.3.2.2 SMALL CAR WHEEL NEGATIVE POSITION



Main shaft → spring → cone → wheel → bowl → quick nut

When the deformation of the outside of the wheel, adopt this method to positioning to guarantee the accurate positioning of the steel rim inner hole and main shaft.

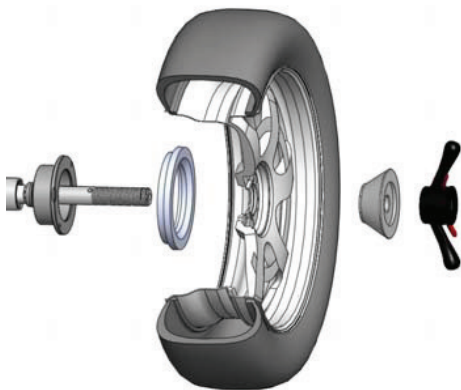
suitable to the steel rim, especially the thick ALU

The choice on the cone should be adapted to the rim center hole

and pay attention to its direction. Or it will cause the inaccurate measurement.

6.3.2.3 LARGE FLANGE DISK POSITION(OPTIONAL)

This position is adapted to the mount of the large tire.

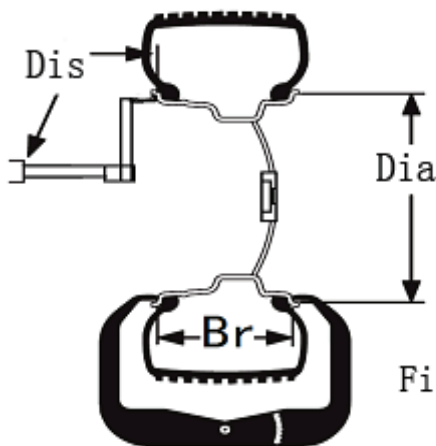


Main shaft → large flange plate (fixed on the main shaft) → wheel → cone → quick nut

Note: The choice on the cone should be adapted to the rim center hole and pay attention to its direction. Or it will cause the inaccurate measurement.

6.4 INPUT VALUE

6.4.1 Input Distance



Pull the Dis scale to the position stuck on the rim. Press the key to input the Di value into the display. At this moment, the display will display “Dis”: “XXX”. And we can also adjust this value by rotating the tyre fixed on the main shaft.

When use the automatic scale, the distance from the

machine frame to the tire can be accessed by the automatic scale. To reach the measurement accuracy, you must execute a calibration before operation.

6.4.2 Input (Br) eadth Value



Use the Br caliper of the accessories to measure the breadth of the rim. Press the key to input the Br value into the display. And now the display will display “Br”: “XXX”. And we can also adjust this value by rotating the tyre fixed on the main shaft.

6.4.3 Input the Tyre Diameter Value

After confirming the rim diameter, press the key to input the rim diameter into the display. At this moment, the display will display “Dia”: “XXX”, And we can also adjust this value by rotating the tire fixed on the main shaft in this process we should open this function. The machine can automatically access the diameter of the rim tested.



Note: When you balance the tire with the relative larger diameter (DIA>23”) ,you can adopt long scale to automatically measure. It is very conveniently.

The detailed measurement methods: Fist pull the scale to enter the long scale situation and then pull the scale to the zero position. At this moment, you will hear the sound of click and then quickly pull the scale to the measurement position. When the measurement result is same to the short scale measurement result, using long scale to measure the tire of larger diameter is more convenient.

6.4.4 UNIT CONVERSION SELECTION:



①The unit conversion of the Br of the rim from inch to mm:

Normally, the display of Br should be in inch. When you need the unit of the display to be mm, you can use the key to realize the unit conversion from inch to mm.

②The unit conversion of the D of the rim from inch to mm:

Normally, the display of D should be in inch. When you need the unit of the display to be mm, you can use the




key to realize the unit conversion from inch to mm.

After unit conversion, the unit of the display values of rim Br and D are , but when you switch off and then on the wheel balancer, the unit will be still inch.




③The unit conversion from gram to ounce:

Normally, the unit of the unbalance value is gram (g). If you want to make the ounce(Oz) to be the unit, you can execute the g/Oz conversion. The unit of the displayed unbalance value is gram(g). The way to realize the unit

conversion from gram to ounce is to press .



6.4.5 When press the start key , wheel balancer starts to run. A few seconds later, the machine automatically stop. The machine can also automatically start by lowering down the protective cover which can be setup by the program.

6.4.6 DISPLAY UNBALANCE VALUE

When the spin ends, the display will display the inner



and outside



value of the rim.

Use your hand to pull the wheel. When all the positioning lamps light inside and outside light, the weight adding position will be indicated.

6.4.7 Rotate the wheel, when the left side positioning lamp all light, at this moment, the highest position is the inner unbalance position and when the right side positioning lamp all light, at this moment, the highest position is the outer unbalance position.

6.4.8 Add the corresponding weight at the unbalance point and start test again until the balance of the tyre.

CAUTION!

1. When start the machine, use hand to pull the wheel to help it start rotation, especially to the relative bigger

tyre, to prolong the working life of the motor.

2. Check if there are any mistakes on the dimension.

3. Check if the balance methods meet the configuration of the rim and select the balancer most easily to balance.


4. Check if the contract nut tight or not.

5. When the balance ends, remove the tyre. Pay attention to handle it with gentle and avoid knocking the main shaft.

6. When clipping the weight. Use the hammer to clip the weight on the rim without too much force. Place on the ground and knock and do not knock when it is on the main shaft to avoid damaging the sensor. The position to add the weight must be without the grease and dry.



6.5 UNBALANCE VALUE DISPLAY RESIDUAL

The minimum value of the standard weight is 5g so if the weight you use is less than 5 g, the wheel balancer will not display the value and only displays the state of "00". When you need to display the residual unbalance

value, you should press , and the display will immediately display the inside or outside unbalance value of less than 5g. The maximum residual unbalance value is 4 g.

6.6 BALANCE MODE SELECT


Select the balance mode according to the weight adding

position and the balance mode. Press the  and 



Corresponding key to select the balance mode.

When you switch on the machine the machine will automatic enter into the dynamic balance mode and no need to select.

Note  color to indicate the modified position of the weight



DYNAMIC—clip the weight on both sides of rim (dynamic balance test once start)



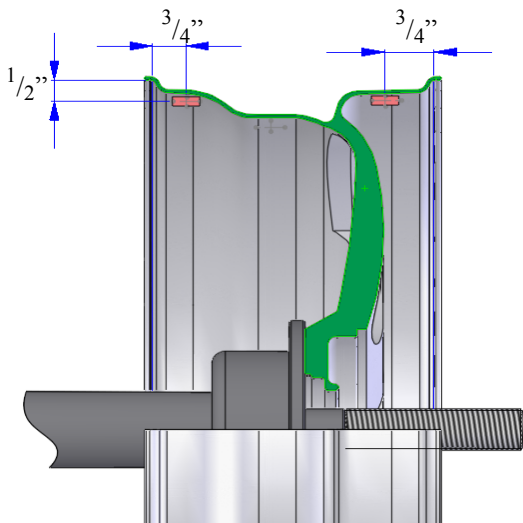
STATIC— Stick weight in centre



STATIC—optional for balancing the motorcycle. When balancing motorcycle wheels, you require the (optional) motorcycle adaptor accessory MJ-II. With the assistance of the extension scale, to measure Di, Br and Di. Input the measure value into the Di, Br and Di display window. The input method is similar to the parameter input of the car.. When we balance the motorcycle tyre, we do not select the MOT function if the present scale can measure the value of dis. And if the present scale can not measure the value of dis, we need the extension scale to execute the dynamic balance. First we should select MOT and then input the parameter to execute the dynamic balance.



ALU1—to balance light aluminum alloy rim by sticking the weight on the shoulder of the rim.



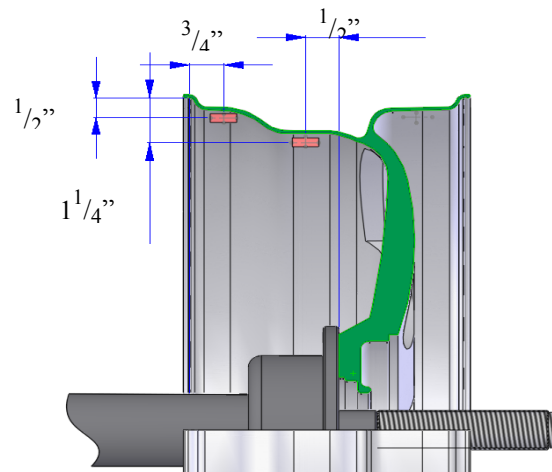
ALU1

$$Dis1 = Dis + \frac{3}{4}''$$

$$Br* = Br - 1 \frac{1}{2}''$$

$$Dia1 = Dia2 = Dia - 1''$$

ALU2—to balance light aluminum alloy rim by hiding the weight inside.



$$Dis1 = a + \frac{3}{4}''$$

Br* = Dis from O point to the outside of the flange disk $-\frac{1}{2}'' - Dis$

$$Dia1 = Dia - 1'' \quad Dia2 = Dia - 2 \frac{1}{2}''$$



ALU3—Click the weight inside and stick the weight outside (outside position is similar to ALU2)

Dis1=Dis

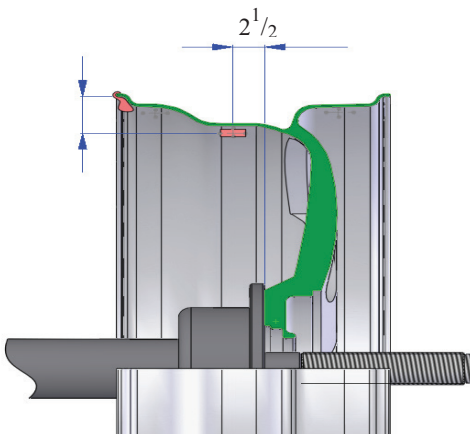
Dis2= Dis from O point to the outside of the flange

$$\text{disk} - \frac{1}{2}''$$

Dia1=Dia

$$\text{Dia2} = \text{Dia} - 2 \frac{1}{2}''$$

1 1/4''



ALU4—Click the weight inside and stick the weight outside (outside position is similar to ALU2)

Dis1=Dis


$$\text{Dis2} = \text{Dis} + \frac{3}{4}''$$

Dia1=Dia

$$\text{Dia2} = \text{Dia} - 1''$$

6.7 ALU* SELF DEFINITION METHOD AND

WEIGHT SPLIT FUNCTION ALU*

When the customer select the self definition ALU modes , first use the scale to measure the inside position of the definition weight and then press




key to confirm. At this moment, the display will display the dimension at the D1 position. And then use the scale to measure the inside position of the definition weight. When we hear the sound of tick, Meanwhile, the display will display the dimension at the D2 position. On this condition, we complete the measurement. Press start key to start up the machine. After the machine stops rotating, the display displays the inside and outside unbalance value. Rotate the wheel until the entire inside position indication lamps light up. At this moment, the D1 lamp will light. Step the brake to stop the tire. Pull out the scale and the Dis value will reduce when the length of the scale enlarged. When pull to the zero position, press the back end of the scale and the seal will mark a weight position. In a similar way, when the entire outer indication lamp light, mark a weight stick position and stick the corresponding weight and rotate the wheel to test and the definition ALU mode complete.



ALU DEFINITION BALANCE MODE :

You can hide the weight behind the spoke. This is only applied to the outside weight. The detailed operation step is :

6.7. 1、 After complete the definition ALU mode,

first stick the weight inside and select  key.

The display will display "SP" –"5". According to the

actual spoke quantity, press   to adjust to the actual quantity of the spoke to clip the weight and

then press  to confirm.

2 Position any bar of the spoke to the 12clock and hold on and press





to confirm.

6.7. 3 COMPLETE THE SPLIT WEIGHT: Rotate the tire, the outside indication lamp will Rotate the tire and the outside indication lamp will help to split into two unbalance value at the 2 rims adjacent to the weight position. Adjust the position until the entire indication lamps light up. At this moment, stick the weight of unbalance on the inner wall of the rim. That position must be the rear side of the 2 adjacent spokes.



6.8 OPT MODE

6.8.1 After complete the dynamic balance mode, press . If exceed the setup value of the unbalance,

it will display "YES"-“OPT”, press  once again, it will display OPT1 OPT. At this moment, position the inflation nozzle at the 12clock. At the same time, use the chalk to draw a jump line at the rim and spoke.


Press  to confirm.




6.8.2The display displays OPT2 OPT , use the tire changer to demount the tire and then mount the tire onto the main shaft of the wheel balancer and position the nozzle mark at 12 clock and start the machine.



6.8.3 Rotate the wheel until the entire indicating lamp light up, use the chalk to draw a line on the rim at 12clock and then use tire changer to coincide the 2above mentioned marking lines on the rim and the tire. At this moment, you complete the OPT operation.

6.9 CUYSTOMER MODE

The customer mode allows the user save the maximum of 4 customer-save modes.

6.9.1First press  and hold on, you will enter into the customer mode select window after 5seconds.

Press   to select the customer and confirm a special customer and then press  to save.

6.9.2Then you can adjust the habitual customer mode setup including if the protection cover function used or not, the on/off of the scale function, unit setup and tire parameter. After you complete the setup, you can press and hold on the  and press  to save. The customer mode save is completed.

6.9.3When you need to switch the customer mode, you can select according to 6.9.1. That means you can enter into the customer mode you select. That customer mode will be automatically the default mode after you start up.


6.10 SUPPLEMENTARY EXPLANATION:





Once switching on, you will see standard dynamic balance mode setup by the computer. When selecting ALU mode and the configuration of the aluminum alloy rim is similar to the above standard ALU1\ALU2\ALU3, you can get relative accurate balance effect. If the section of the tire similar to the one given be the program, you need do some adjustment on the position and weight of the weight. General speaking, 1~2 times of adjustment can reach relative satisfactory balance effect.





7 PROGRAM SETUP




7.1 PROGRAM FUNCTION INTRODUCTION

Press program key  to enter the program setup menu.

7. 1.1 **SET -OPT- (unbalance value optimum calibration):** Press  key to confirm the entrance.

Select   up and down key to adjust the unbalance threshed value. You can choose from 5Gr-100Gr and press  to confirm. Press  key to enter the next function setup level.

7.1.2 **SET -p- (protective hood setup)** Once again press  to confirm the entrance. Select   up/down key to ON/OFF setup the protective hood function and then press  key to return.


7.1.3 **SET-SP- (protective hood control)** Select   to enter and then press  key To confirm the entrance and the setup is similar to the above.

7.1.4 **SET-CAR-APP(light tire minimum unbalance setup)** You can setup 1Gr and 5Gr. The setup is similar to the above.

7.1.5 **SET-BUS-APP(heavy tire minimum unbalance setup)** You can setup 10Gr and 50Gr. The setup is similar to the above.

7.1.6 **SET-BIP (beeper setup)** You can setup the on/off of the beeper.


7.1.7 **SET-RU1 (set up if the automatic scale Dis -to the machine- input automatic or not)** You can choose on or off.


7.1.8 After complete the above setup, press  to set to save.

7.1.9 **SET UP (enter the next menu of the program)** Involve the test on the various sensors and scales and the calibration.


7.1.10 **SET- UP** Press  key to enter into the special function setup.


TES -INT- (sensor\scale measurement) It can separately measure the photocell sensor, piezoelectric sensor, Dis, Bre and Dis . Through the test, we can identify the problem.

Press  key to enter and the display will display TES POS (phase sensor). Rotate the tire forward and backward and the display will display TES –POS- XXX. If rotate the tire backward, the value of XXX will increase and if forward, XXX will decrease.

Once again press key  to enter TES STA (dynamic test sensor). When service, press the sensor vertical to the main shaft.

You can execute the following step by step:
 TES DYN (dynamic sensor test)
 TES Dis (test for the distance to the machine)
 TES Dia (test for the rim diameter)
 By testing the above sensors, you can quickly find the trouble shooting point.
 After entering into SET UP, if do not enter the TES- INT

program. Press  key, you can enter the customer weight marking (CAL WEI) You can select this function when you consider the test result inaccurate or the machine not used for a long time. When you enter into this function, display will display ADD –O- and press


 to start the machine for a time.



(This operation must be executed after mounting the tire or rim with the relative small unbalance value and input the correct value of the Dis, Br and Dia) Or you will cause the inaccurate measurement result.


When rotate the wheel to test, it will display ADD -100. Rotate the wheel and clip a piece of standard weight of 100Gr at the top center position when the entire tire unbalance indicating lamp light. And start the machine once again, you can realize the calibration. This operation can make the machine fast restore its use of precision.


****The shortcuts is located in the operation window not



the program setup window. Press and hold on  key. Five seconds later, the program will automatically enter the calibration program and the display will display ADD -0-. The other operation steps are similar to the above.


If need to enter the scale calibration, follow the following steps:

The display will display CAL WEI. Press  to enter CAL RL1


I Enter the scale calibration program : CAL RUL (distance to the machine) Press  key to confirm the entrance and the display will display Dis 0


Position the scale to the zero position, press  to confirm and the display will display Dia 14, Mount a medium size tire or rim on the main shaft and then, according to the diameter of the rim and tire mounted

on the shaft, press   to adjust the 14to the dimension of the rim mounted (change the value on the right window from 14 to 16 if the diameter of the tire mounted is 16”) and then pull out the scale end to lean it against the edge of the rim and at the same time

press  key to confirm. Thus we have completed the automatic scale calibration.

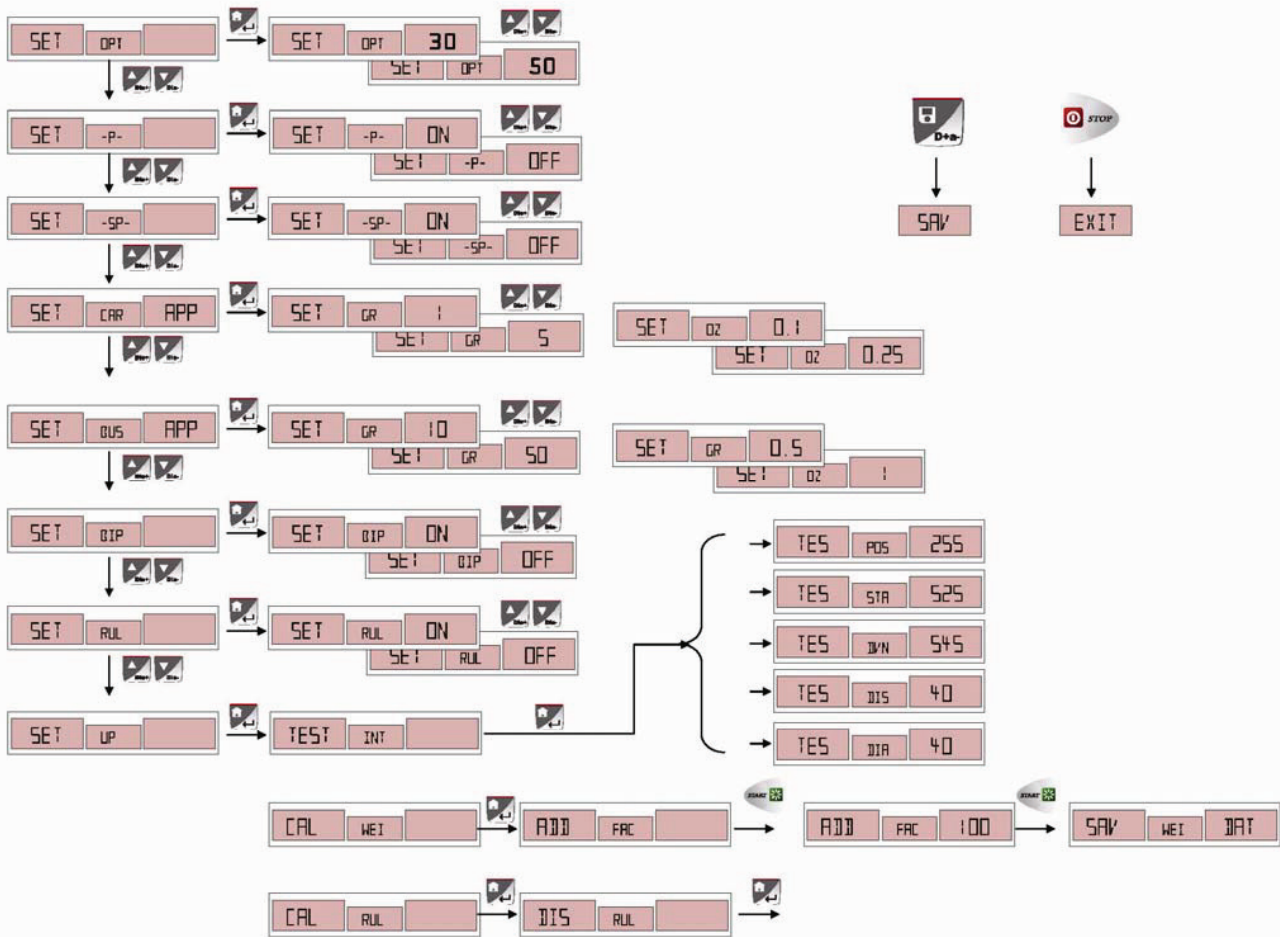
II ****The shortcuts is located in the operation window not the program setup window. Press and hold on

 key. Five seconds later, the program will automatically enter the calibration program and the

display will display ADD -0-. Then press  and the display will display “CAL”—“RUL”, The other operation steps are similar to the above.

Note:The automatic scale must be at the home position when start the machine. Or the scale will not be active.

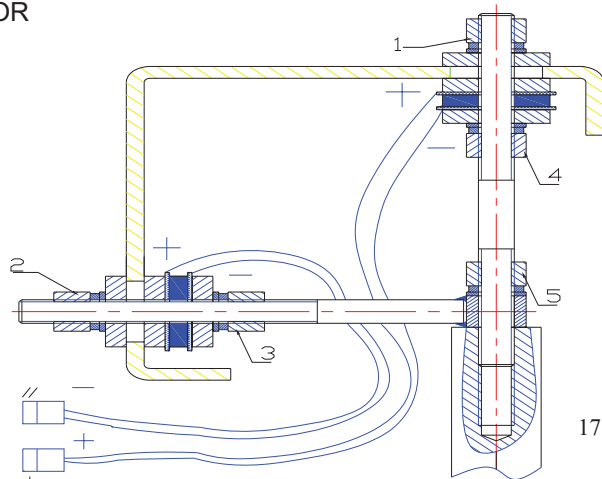
The above operation step vector diagram is as follows:



7.2 ERROR INDICATION:

Attention: When change the computer board, the phase sensor or the press sensor, you must execute the calibration. When change the computer board, you should setup the parameter according to the parameter marked in the machine or on the original computer board. Repeat the calibration after the modification.

7.3 INSTALLATION AND WIRING OF THE PRESS SENSOR



Sometimes, inaccurate balance or incorrect position is caused by the breakage of the press sensor. The changing method of the sensor is as following:

(1)Remove the upper cover and the right side panel of the balancer.

(2)Detach the nut1 and 2, elastic washer, plain washer and large flat washer.

(3)Loose the back nut3.4.5 to detach every parts.

(4)Change the new sensors and tight the dual-head screw and then tight nut 5. The installation of the negative and positive pole of the piezoelectric ceramics disk of the sensor must follow the picture.

(5)Use the spanner to tight the nut4 and then nut 3. At this moment, you should pay attention to the horizontal and vertical sensor screws should be vertical. And the end of the screws should be just fallen into the 2 holes.

(6)Mount the nut1 and 2, elastic washer, plain washer and large flat washer and completely tight them. Usually, lock nut 1 and then nut 2. We require to flat the elastic washer and then return the nut 1/4—1/2turn. Use this way to get the normal pre-pressure of the press sensor (use torque wrench to lock and the torque is 40NM)

(7)There are glass glue coat on the surface of the press sensor and the normal installation result of the piezoelectric ceramics disk of the sensor is the IR should be larger than 50MΩ.

(8)Discharge the output line of the shortcuts press sensor, insert into the computer board after discharge to avoid the breakage of the computer board.

(9)Insert the vertical (⊥) & horizontal (//) sensor plugs according to the original position.

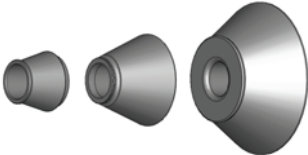





(10)Calibrate the balancer again and install the upper cover and the side panel after check result is normal.




7.4 GENERAL TROUBLESHOOTING & SOLUTION:

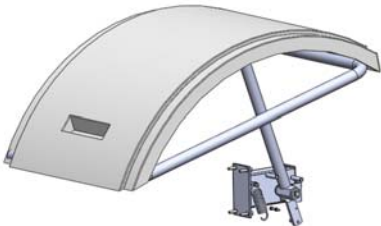

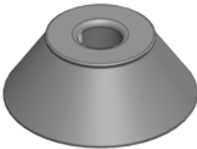

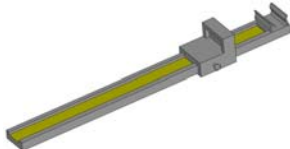



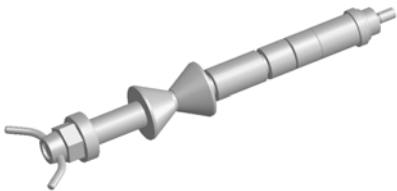

Description	Cause	Solution
Start the machine but not display.	<ol style="list-style-type: none"> 1. Check the circuit of 220V is normal or not. 2. power board fault 3. The cable between the power board and computer loose 4. computer board fault 	<ol style="list-style-type: none"> 1. Check and connect the external power source. 2. Changer the power board 3. Check the plug cable 4. Change the computer board
Display is normal but the start button and input push button not working.	<ol style="list-style-type: none"> 1. contact switch not good 2. machine breakdown 	<ol style="list-style-type: none"> 1. Open the housing of the machine and plug in and tight the contact switch plug. 2. Start the machine again
Display is normal but not braking after start.	<ol style="list-style-type: none"> 1. The cable between the power board and computer loose 2. power board fault 	<ol style="list-style-type: none"> 1. Plug in and tight the cable between the computer board and power board.

	3. computer board fault	2. Change the power board 3. Change the computer board
Balance is not accurate & difficult to reach "00"	1. sensor lead connect or contact no good 2. memory value lost	1. Connect again 2. Correct the memory value according to the manual.
Each spin, the change of the value will not exceed 5g.	1. There are foreign body on the rim or the assemble surface in the rim center deformation 2. sensor damp or quick nut not tightly clamped 3. The external power voltage or the air pressure not enough. The flange dick not locked.	1. Change the wheel 2. Oven, recalibrate the sensor. 3. Fix the anchor bolt.
Each spin, the range of the change of value will be 20-90g.	1. There are foreign bodies on the wheel or the unbalance of the wheel value too big. 2. sensor damage 3. external power source voltage too low	1. Change the wheel 2. Check the sensor and wiring. 3. Check power source and assemble stabilizer.
Balance is not accurate & difficult to reach "00"	1. Sensor damp or damage 2. Program chore	1. Calibrate again, oven and then calibration or change. 2. Calibration again
When second mount & demount, the error will exceed 10g.	1. Wheel internal hole irregular 2. Flange disk assemble not properly	1. Change the wheel 2. Check the assemble surface and try again.

7.5 ACCESSORIES OF THE WHEEL BALANCER

STANDARD ACCESSORIES					
ACCESSORIES	Name	Q.ty	ACCESSORIES	Name	Q.ty
	Cone(40)	1 SUIT		Breadth Measuring Scale	1
	Weight Pliers	1		Threaded Shaft	1
	Quick Ring nut (40)	1		100g Weight	1

	Gauge Extension	1		Plastic Cap Protective Cover	1
	Plastic Cap	1			

OPTIONAL ACCESSORIES			
ACCESSORIES	NAME	ACCESSORIES	NAME
	Guard		Four Holes Adapter(40)
	Special Cone (40)		Flag
	WEIGHT POSITION SCALE		CENTERLESS CALIPER
	DK-W-1(40)		DK-W-2(40)
	MJ-I(40)		MJ-I I(40)

The manufacturer will not bear any responsibility in the event of claims resulting from the use of non-original spare parts or accessories.

8. MAINTENANCE



WARNING



WARNING

Unplug the machine from the socket and make sure that all moving parts have been locked before performing any adjustment or maintenance operation.



WARNING

Do not remove or modify any part of the machine (except for service interventions).



CAUTION

Keep the work area clean.

Never use compressed air and/or jets of water to remove dirt or residues from the machine. Take all possible measures to prevent dust from building up or rising during cleaning operations. Keep the wheel balancer shaft, the securing ring nut, the centering cones and flange clean. These components can be cleaned using a brush previously dipped in environmentally friendly solvents. Handle cones and flanges carefully so as to avoid accidental dropping and subsequent damage that would affect centering accuracy. After use, store cones and flanges in a place where they are suitably protected from dust and dirt. If necessary, use ethyl alcohol to clean the display panel. Perform the calibration procedure at least once every six months.

LUBRICATION

The only rotating parts of the wheel balancer are the motor and balance shaft. These parts must be periodically lubricated by the operators. If the machine is used very frequently, more than 2hours per day, we should annually check the bearing. And we will check once a year if the machine is used less than 2hours a day. When test, do not open up the bearing so you need insert a screwdriver to test the noise. Due to the function of the bearing is to clamp and support

and not suitable to change or remove the grease. In addition, the speed of it is not too fast compared to the machine so no need to change the grease. If you note the run of the bearing abnormal or there is noise, change the bearing. If the customer confirms the bearing is not changed, you only need change the grease. Disassemble the bearing and open up the sealing ring and fill the XHP103 grease. These operation should be guided by the profession personnel and calibrate the machine after changing the grease. If the change of the grease not correctly, it will influence the accuracy of the machine. On this condition, you need to reinstall the sealing ring and assemble the machine and adjust again.

Technical safety card for using grease in the wheel balancer

Mobilgrease XHP	103
NLGI degree	3
Type of thickener	Li-complex
Colour, appearance	Dark blue
Penetration on the processed item	235
25°, ASTM D 217, mm/10	
Dropping point, °C, ASTM D 2265	280
Viscosity oil base, ASTM D 445, cSt @ 40°C	100
Change of penetration consistency, ASMT D 1831	10
(established upon the rolling of the greases), mm/10	
4 spheres test, impression diam., ASTM D 2266, mm	0.5
4 spheres test, welding load, ASTM D 2509, kg	315
Test Timken OK load, ASTM D 2509, lb	45
Stability of oxidisation bomb method, ASTM D 942, pressure	35
drop at 100 hours, kPa	
Corrosion prevention, ASTM D 1743	Passed
Emcor rust, IP 220, wash away with acid water	0
Rust protection, IP 220-mod, wash	0

away with distilled water
Corrosion on copper, ASTM D 4048 1A
Resistance to water spray, ASTM D 15
4049, % spray
Wash away with water, ASMT D 5
1264, loss (weight%), @ 79°C


SCRAPPING

If the machine is to be scrapped, separate all electrical, electronic, plastic and ferrous components and dispose of them separately, as provided for by local regulations in force.

ENVIRONMENT INFORMATION


If the machines have the crossed-out bin symbol



on their data plate  , the following disposal procedure must be applied to.

This product may contain substances that can be hazardous to the environment and to human health if it is not disposed of properly.

Electrical and electronic equipment must never be disposed of in the usual municipal waste but must be separately collected for their proper treatment.

The crossed-out bin symbol  , placed on the product and on this page, reminds the user that the product must be disposed of properly at the end of its life.

Thus, the hazardous consequences that non-specific treatments of the substances contained in these products, or improper use of parts of them, may have on the environment or on human health are prevented. Furthermore, this helps to recover, recycle and reuse many of the materials contained in these products.

Electrical and electronic manufacturers and distributors set up proper collection and treatment systems for these products for this purpose.

Contact your local distributor to obtain information

on the collection procedures at the end of the life of your product.

When purchasing this product, your distributor will also inform you of the possibility to return another end-of-life piece of equipment free of charge as long as it is of equivalent type and had the same functions as the purchased product.

Any disposal of the product performed in a different way from that described above will be liable to the penalties provided for by the national regulations in force in the country where the product is disposed of.

Further measures for environmental protection are recommended: recycling of the internal and external packaging of the product and proper disposal of used batteries (only if contained in the product).

Your help is crucial to reduce the amount of natural resources used for manufacturing electrical and electronic equipment, minimize the use of landfills for product disposal and improve the quality of life, preventing potentially hazardous substances from being released in the environment.

FIREFIGHTING MEANS TO BE USED

Consult the following table to choose the most suitable fire extinguisher.

Dry materials
Water YES
Foam YES
Powder YES*
CO2 YES*

YES* Use only if more appropriate extinguishers are not at hand or when the fire is small.

Flammable liquids
Water NO
Foam YES
Powder YES
CO2 YES

Electrical equipment

Water NO
Foam NO
Powder YES
CO2 YES



Warning

This table contains general instructions to be used as guidelines for users. All the applications of each type of extinguisher must be obtained from the relevant manufacturer.

9.DETAILED MACHINE OPERATION:

9.1 How to balance a tire?

1. Switch on the power source

2. Select the cone according to the tire. Assemble the tire on the main shaft of the wheel balancer and firmly lock it.



3. Input the tire parameter.


3.1 Pull out the scale of the balancer to measure the Di value which means the distance from the insider of the tire to the body. According to measured reading, the unit of which is cm, press



, to adjust the value to make the value displayed in the right side window to be the measured value. But the unit of this displayed value is mm. eg you should input 55mm if the measured value is 5.5cm.

3.2 Use the width measurement scale to measure

the Bre. you can press   to input the Br value which is the implied value with the unit of inch. If you want to convert this value into the

value with the unit of mm, press  to realize the conversion between the units.

3.3 Check the D value, which means the diameter of the rim, marked on the tire. Press the key



to realize the conversion of the Br unit .

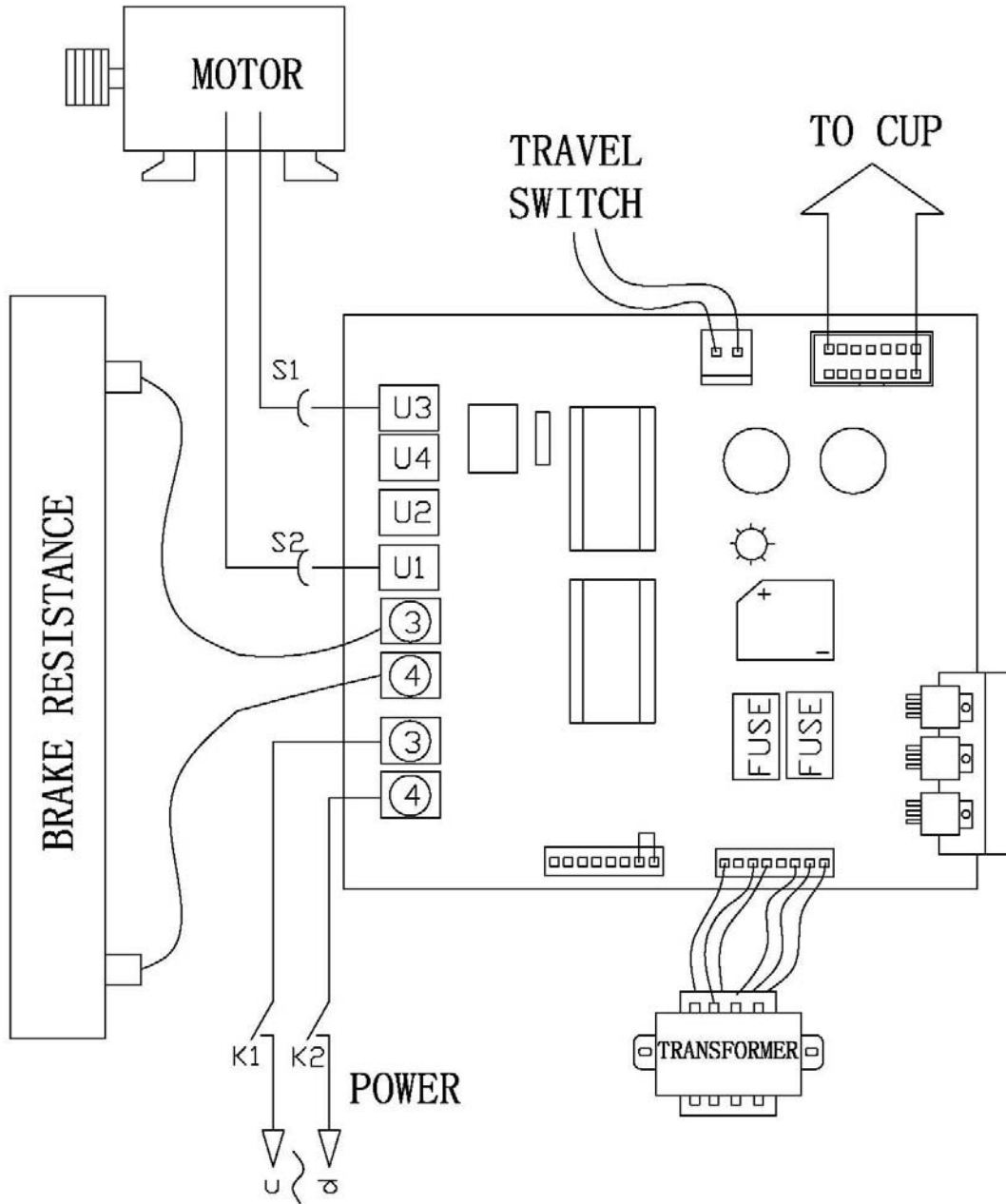
4. Lower down the protective cover (you can also press the start key) . After the machine start, rotate and test, it will automatic stops. In the left /right window, the corresponding values will be displayed. Rotate the tire, when all the position indication lamps light. Pls add the weight corresponding to the value displayed in the window. Once again, start the machine to test. The window will display the unbalance value. The balance process will be completed until reaching the balance range you required.

9.2 Herewith, we will not explain the ALU mode in detail, the operation of ALU1\ALU2\ALU3\ALU4 is according to the diagram in the chapter 6.6.

The function of the OPT mode and ALU* mode can be seen in the demonstration CD.

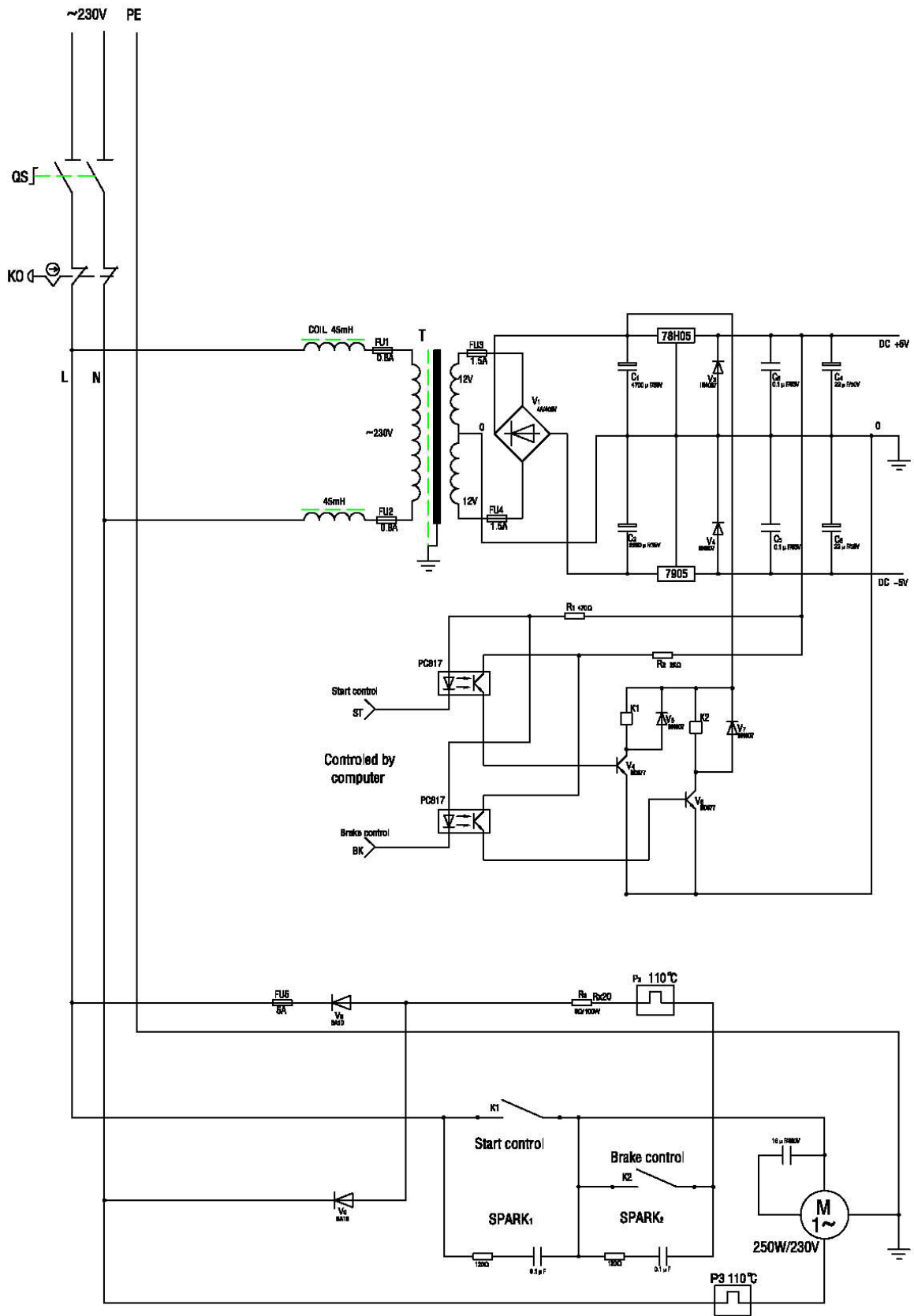
APPENDIX I

LAYOUT OF THE POWER SUPPLY CARD



APPENDIX II

Wiring Diagram



Sequence No:

Model:

Production Date:

WARRANTY

Machine involves the warranty period of 90 days and the parts and components are 6 months.

The manufacturer is only responsible for the normal wear, improper transportation or use and the maintenance without care. Manufacturer will not notify the customers when improve the products and production line for this warranty terms do not involve the change result. All the claims must clearly note the model and sequence number of the machine.