

# **Model No. 953 Wheel Balancer**

## **Instruction Manual**

The specifications stated in this manual are not binding, and due to the process of continuous improvement & development we reserve the right to change any specification without prior notification.

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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.



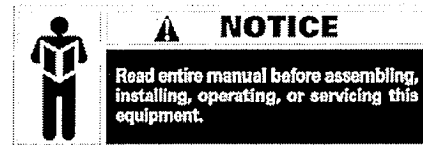
**WARNING:** Dangers or unsafe procedures that can cause serious injury or death.



**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.

 **WARNING**

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 -5° to +50°C.

 **WARNING**

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

 **WARNING**

The machine must not be operated in potentially explosive atmospheres.

## SAFETY REGULATIONS

 **WARNING**

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.

 **WARNING**

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.

positioned on the rear left side of the machine, indicates where to connect the ground wire.

**DECAL LOCATION DIAGRAM**



**WEAR PROTECTIVE GLOVE**



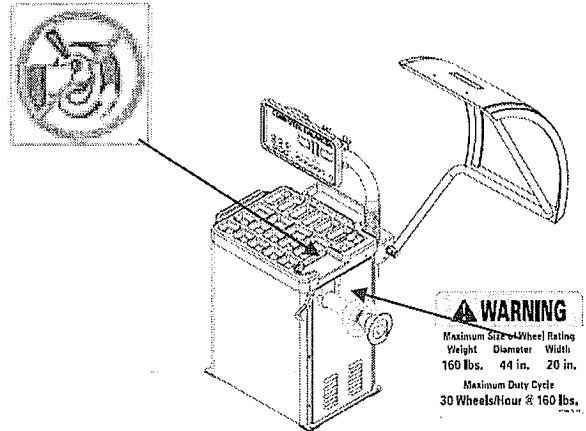
**READ OPERATION MANUAL**



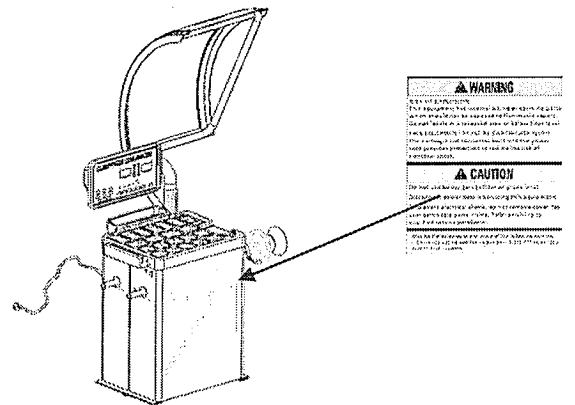
**WEAR PROTECTIVE GLASSES**



**POWER OFF THE ELECTRICAL SOURCE OF THE MACHINE DURING MAINTANCE**



**WARNING**  
 Maximum Size Wheel Rating  
 Weight Diameter Width  
 160 lbs. 44 in. 20 in.  
 Maximum Duty Cycle  
 30 Wheels/Hour @ 160 lbs.



**WARNING**  
 Read the instructions before using this equipment. Do not use this equipment if you are under the influence of alcohol or drugs. Do not use this equipment if you are tired or fatigued. Do not use this equipment if you are wearing loose clothing or jewelry. Do not use this equipment if you are wearing shoes that do not have proper protection of the soles of the feet.

**CAUTION**  
 Do not use this equipment if you are not trained. Do not use this equipment if you are not familiar with the controls. Do not use this equipment if you are not familiar with the safety features. Do not use this equipment if you are not familiar with the maintenance procedures.

**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.

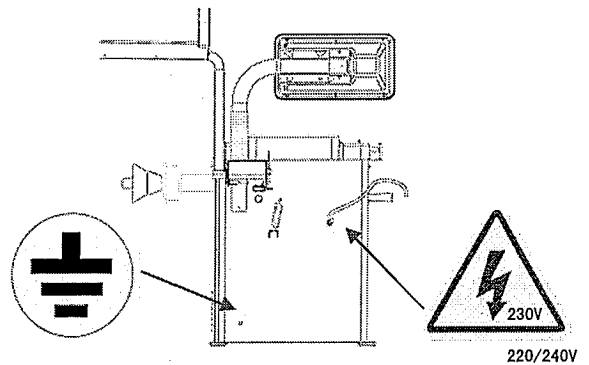


Warning for rotating machine part

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,



220/240V

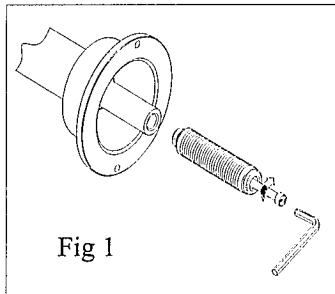
**2.0 INSTALLATION & OPERATION**

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.

## 2.1 PROTECTIVE COVER INSTALLATION:

## 2.2 MAIN SHAFT INSTALLATION



This machine must be grounded with reliable earth wire.

## 2.3 ELECTRICAL CONNECTION & EARTHING

All electrical connections must be carried out by a qualified electrician. If in doubt, contact your local distributor.

Make sure the technical parameter shown on the the machine is comparable with the power supply.

This machine must be fitted with 13Amps fuse.

The voltage stabilizer is recommended to be installed in the power supply.



Any electrical connection to be carried out by a qualified electrician and must comply with all standard regulations.

- 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 and voltage stabilizer in area supply voltage can not be guaranteed;
  - To prevent the unauthorized use of the machine,

it is recommended to disconnect the machine from the power supply.



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.

## 3.0 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 ALU mode for motorcycle.
- self-calibration and automatic trouble diagnosis

### 3.2 MAIN TECHNICAL SPECIFICATION

- rated voltage 220V/240V (selectable) 50/60HZ
- power 250W
- Average Balancing time 7S (20Kg wheel)
- accuracy  $\pm 2g$
- noise  $\leq 69dB$
- rim diameter 10"~24"
- maximum wheel weight 70kg
- rim width 1.5~20"
- net weight 112 kg
- max wheel diameter 39inch(1000mm)
- working environment: temperature 0°C-50°C, relative humidity: 30% —80% (no condensation);

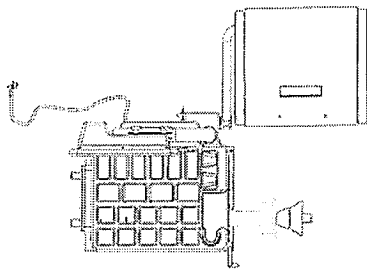
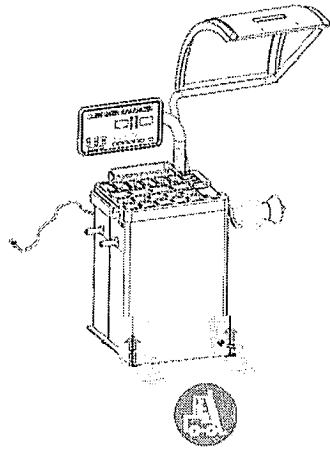
## 4. TRANSPORTATION &

## INSTALLATION

### 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.



Transport the machine in the accordance of the figure above.

**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.

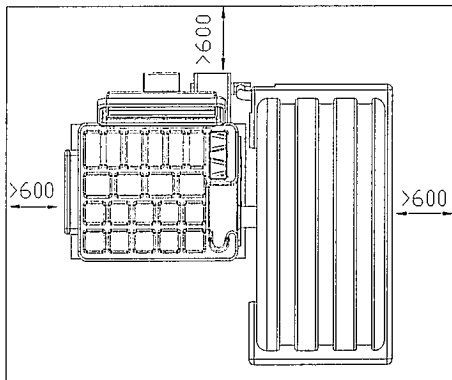


Fig5

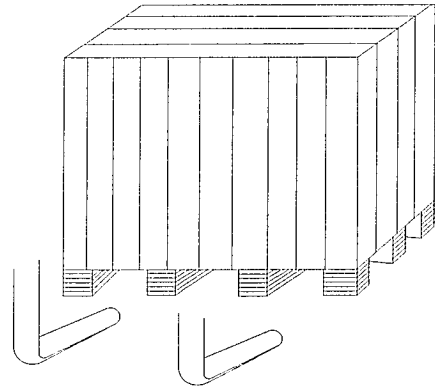


Fig 4

**4.1.2** Packaging materials must be disposed in accordance with environmental regulation for the region.

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

#### 4.2 INSTALLATION

Position 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 until repaired or replacement of the fault part. Do not wear long hair, necklace or loose clothing. The operators should stand beside the machine to ensure the unauthorized personnel are kept clear from the area.



**5.1.3** In the event of the emergency, you should press the “STOP” button immediately. To prevent injury, it must be ensured 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.

#### 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:		Serial No.:	953B1006001
Voltage:	230V~	Frequency:	50Hz
Phase:	1PH/PB	Input Power:	0.3kW
Full-load current:	4.0A	Weight:	125kg
Date of Mfg.:	2008-05-13		



CE APPROVED

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



CE mark indicates that this model of machine has CE certification.

## 6. CONFIGURATION & USE

### 6.1 CONFIGURATION

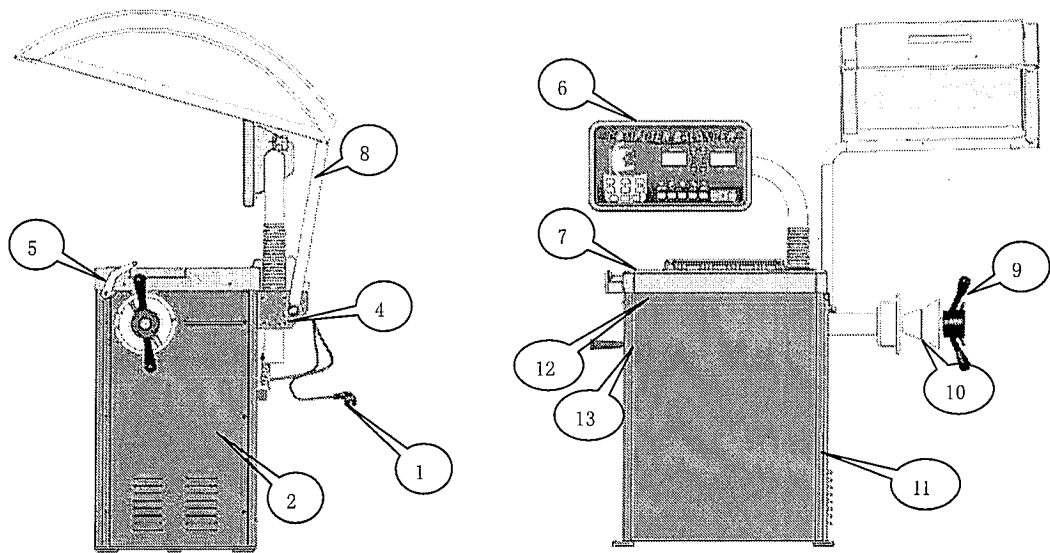
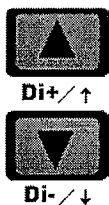
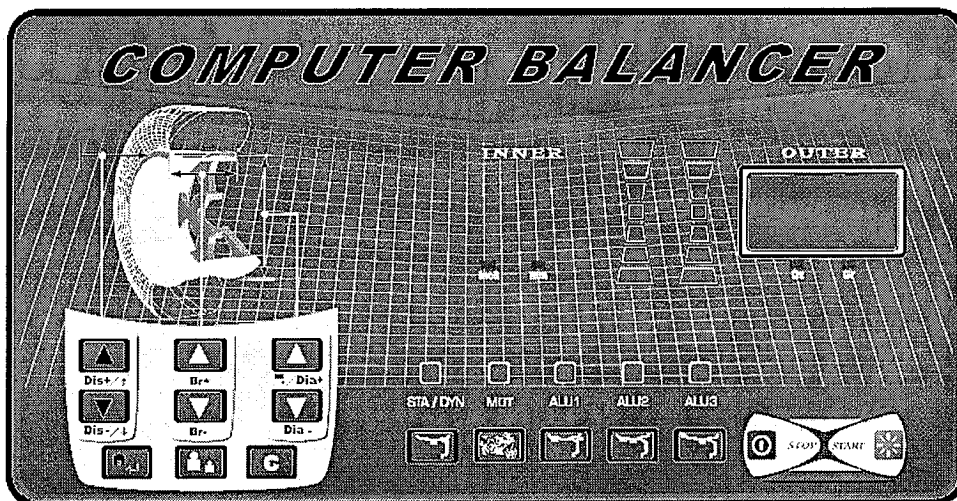


Fig 5

- |                         |                   |                  |                       |
|-------------------------|-------------------|------------------|-----------------------|
| 1. Power plug           | 2. Side Cover     | 3. Return Spring | 4. Positioning Switch |
| 5. Scale                | 6. Control Panel  | 7. Weight Tray   | 8. Protective Cover   |
| 9. Quick Nut            | 10. Balance Shaft | 11. Body         | 12. Power Switch      |
| 13. Cone storage handle |                   |                  |                       |

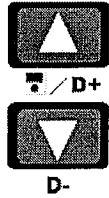
### 6.2 CONTROL PANEL



(1) In the state of parameter input, it is the distance from wheel to balancer input key. You can change the Br set value of the window by press the up/down key.



(2) Br value input key You can change the Br set value of the window by press the up/down key.



(3) In the state of parameter input, it is the diameter of the rim input key . You can change the Br set value of the window by press the up/down key.



(4) High accuracy balance press key When the display is "00", press this key. The display will display 5g of residual unbalance.



(5) Unbalance value conversion key



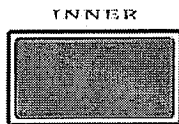
(6) Static/Dynamic/ALU/Motorcycle mode select key



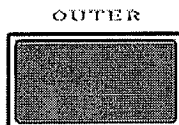
(7) Emergence press key



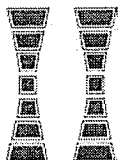
(8) Start key



(9) Inner unbalance value and tyre parameter display



(10) Outer unbalance value and tyre parameter display



(11) Unbalance point positioning lamp



(12) Individual balance mode lamp

## 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

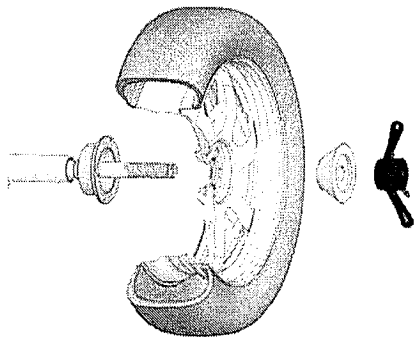


FIG7

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

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. It is suitable to the steel rim, especially the thick ALU

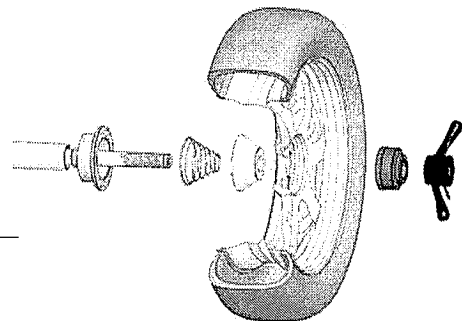


FIG 8

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

6.3.2.3 FLANGE DISK POSITIONING (OPTIONAL)

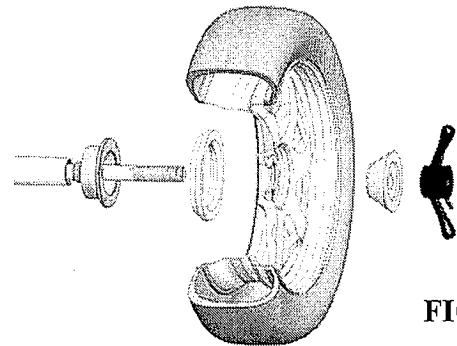


FIG9

Suitable for larger wheels

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



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

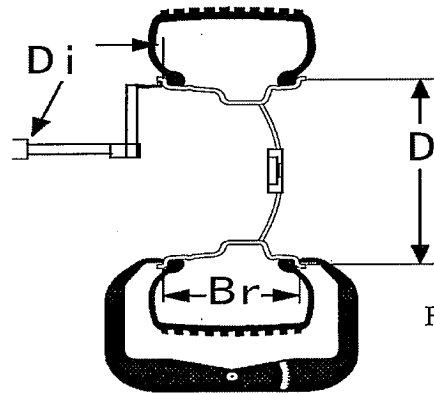


Fig10

6.4.1 Input (Di) stance



Press the key to input the Di value into the display. At this moment, the display will display "Di": "XXX", And we can also adjust this value by rotating the tyre fixed on the main shaft.

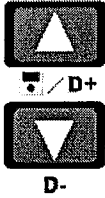
6.4.2 Input (Br) eadth Value



Use the Br measurement caliper to measure the Br of the rim, press the key to input the Br value into the

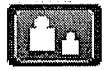
will display "Br": "XXX", And we can also adjust this value by rotating the tyre fixed on the main shaft.

#### 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 "D": "XXX", And we can also adjust this value by rotating the tyre fixed on the main shaft.

#### 6.4.4 UNIT CONVERSION:



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.

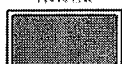

The unit of the displayed unbalance value is gram (g) . The way to realize the unit conversion from gram to ounce is to press .

6.4.5 When press the start key  , the wheel balancer starts to run. A few seconds later, the machine automatically stops. The machine can also start by lowering down the protective

cover which can be set by the program.

#### 6.4.6 DISPLAY UNBALANCE VALUE

When the spin ends, the display will display the

inner  and outer  unbalance 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.




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.






Do not knock the main shaft hardly to avoid damaging the sensor. The position to add the weight should be free from the grease and should be 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 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.

 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  $D_i$ ,  $Br$  and  $D_o$ . Input the measure value into the  $D_i$ ,  $Br$  and  $D_o$  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 the light aluminum alloy rim. Adopt clip the weight on the shoulders of the rim

ALU1

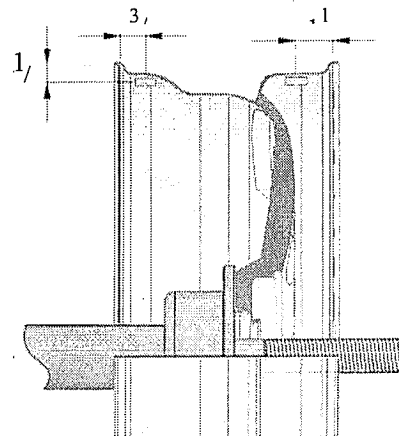


$$D_{i1} = D_i + \frac{3}{4}''$$

$$D_{i2} = D_i + Br - \frac{3}{4}''$$

$$D_1 = D - 1''$$

$$D_2 = D - 1''$$



ALU2—ALU2—for ALU rim, hidden weight Inside ALU2



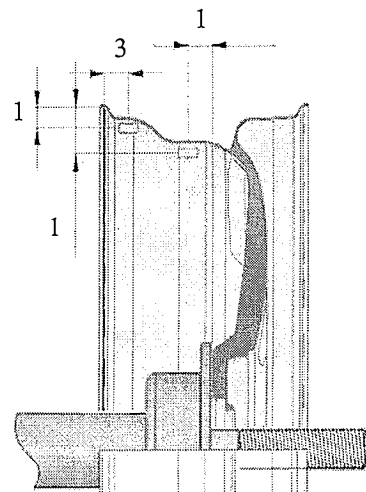
$$D_{i1} = D_i + \frac{3}{4}''$$

$D_{i2}$ =from 0 point to The Outer of the

flange disk— $\frac{1}{2}''$

$$D_1 = D - 1''$$

$$D_2 = D - 2 \frac{1}{2}''$$



ALU3—clip weight inside and stick weight outside (outside position) similar to ALU2)

ALU3

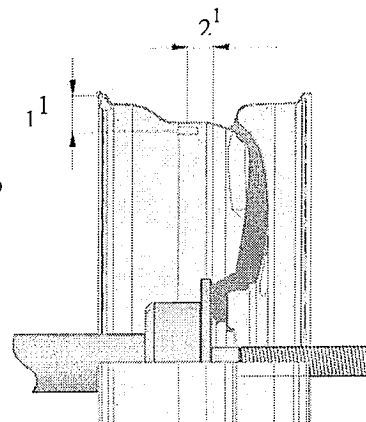


$$D_{i1} = D_i$$

$D_{i2}$ = from 0 point to disk

$$D_1 = D$$

$$D_2 = D - 2 \frac{1}{2}''$$







## 6.7 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 tyre similar to the one given by 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.-p- (protective cover set-up) Press  key again to confirm the entrance. Select  set up the ON& OFF of the protective cover control function. Press  key to confirm to return to the above level.

SP (protective cover control function set-up)



Select  to enter. Press  to confirm the entrance. The set up see the above.


APP(minimum unbalance value setup) can setup to 1Grand 5Gr.

BIP (beeper setup) setup the on and off of the beeper

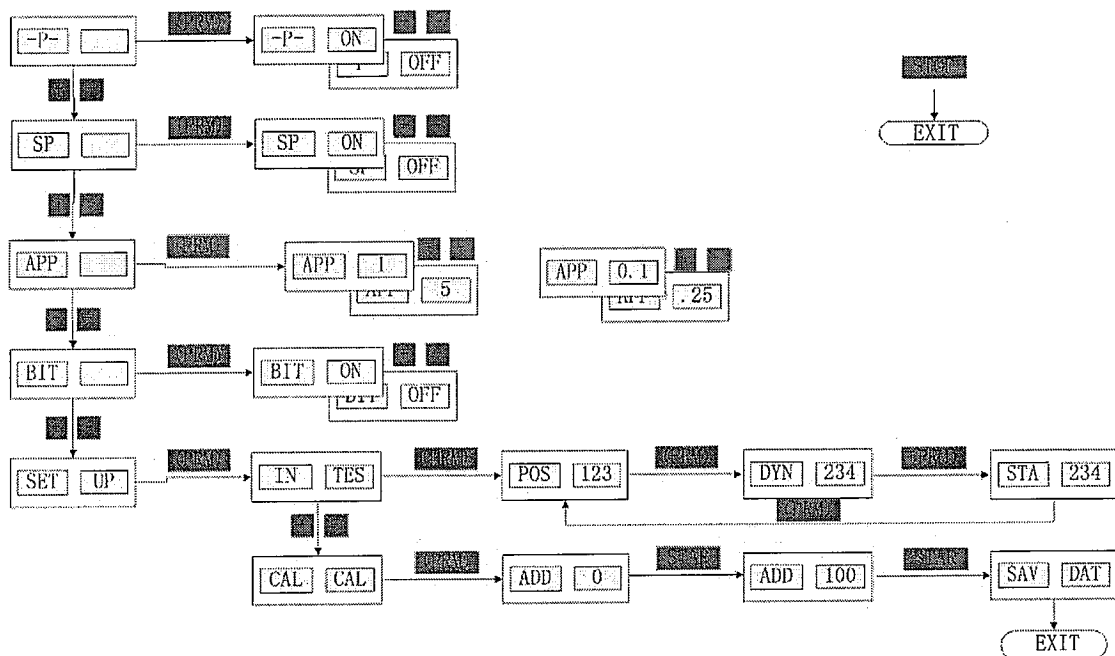
UP ENT Press  to enter the special function setup. IN TES (sensor test) can test the photocell and stat/dynamic piezoelectric sensor. SELECT ON THE NEXT MENU

Enter into CAL -CAL, this function is used when long time no use of the machine or the lost of the

accuracy. Press  to enter  the program

and press  to confirm and the display will display ADD -0. Press the start key to start the test. After running ,the display will display ADD -100. Rotate the tyre and clip a weight of 100g at the 12clock position when all the unbalance position indication lamps light. And then start the machine again to realize the self calibration.

The above operation step vector diagram is as follows:



## 2 ERROR INDICATION

DISPLAY	CAUSE	SOLUTION
ERR OPN	protective cover not lower down	Lower down the protective cover
ERR SP	rotation speed not enough	Check the motor and belt.
ERR OFF	stop the error	Press the start key or raise up the protective cover.
ERR FAC	factory set-up fault	Correct factory set-up
ERR USR	customer set-up fault	set-up fault

If the problems still cannot be solved, please contact with the professional persons.



When changing the computer board, phase sensor or pressure sensor, you should self-calibrate again.

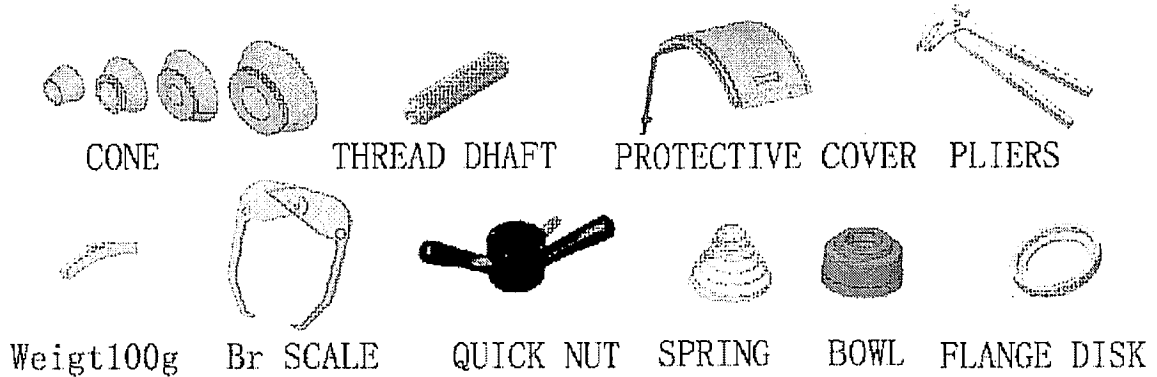


### 7.3 GENERAL TROUBLESHOOTING & SOLUTION

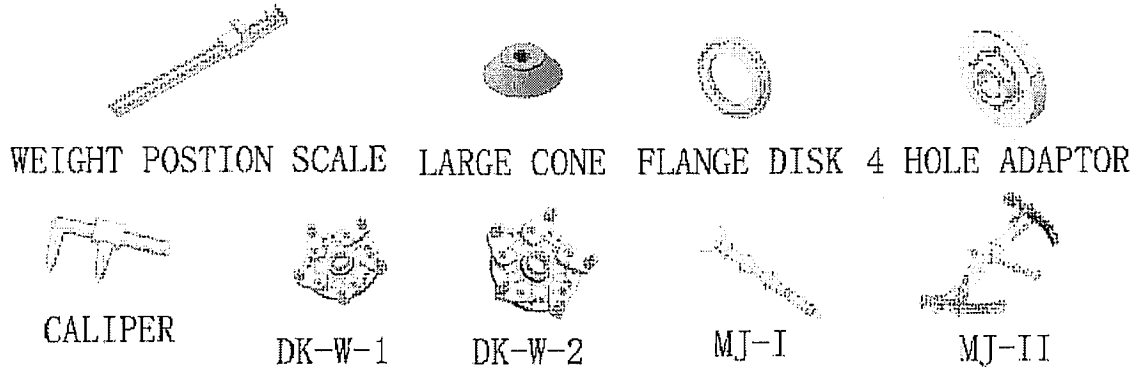
Description	Cause	Solution
Start the machine but not display.	<ol style="list-style-type: none"> <li>1. Check the circuit of 220V is normal or not.</li> <li>2. power board fault</li> <li>3. The cable between the power board and computer loose</li> <li>4. computer board fault</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and connect the external power source.</li> <li>2. Changer the power board</li> <li>3. Check the plug cable</li> <li>4. Change the computer board</li> </ol>
Display is normal but the start button and input push button not working.	<ol style="list-style-type: none"> <li>1. contact switch not good</li> <li>2. machine breakdown</li> </ol>	<ol style="list-style-type: none"> <li>1. Open the housing of the machine and plug in and tight the contact switch plug.</li> <li>2. Start the machine again</li> </ol>
Display is normal but not braking after start.	<ol style="list-style-type: none"> <li>1. The cable between the power board and computer loose</li> <li>2. power board fault</li> <li>3. computer board fault</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug in and tight the cable between the computer board and power board.</li> <li>2. Change the power board</li> <li>3. Change the computer board</li> </ol>
Balance is not accurate & difficult to reach "00"	<ol style="list-style-type: none"> <li>1. sensor lead connect or contact no good</li> <li>2. memory value lost</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect again</li> <li>2. Correct the memory value according to the manual.</li> </ol>
Each spin, the change of the value will not exceed 5g.	<ol style="list-style-type: none"> <li>1. There are foreign body on the rim or the assemble surface in the rim center deformation</li> <li>2. sensor damp or quick nut not tightly clamped</li> <li>3. The external power voltage or the air pressure not enough. The flange dick not locked.</li> </ol>	<ol style="list-style-type: none"> <li>1. Change the wheel</li> <li>2. Oven, recalibrate the sensor.</li> <li>3. Fix the anchor bolt.</li> </ol>
Each spin, the range of the change of value will be 20-90g.	<ol style="list-style-type: none"> <li>1. There are foreign bodies on the wheel or the unbalance of the wheel value too big.</li> <li>2. sensor damage</li> <li>3. external power source voltage too low</li> </ol>	<ol style="list-style-type: none"> <li>1. Change the wheel</li> <li>2. Check the sensor and wiring.</li> <li>3. Check power source and assemble stabilizer.</li> </ol>
Balance is not accurate & difficult to reach "00"	<ol style="list-style-type: none"> <li>1. Sensor damp or damage</li> <li>2. Program chore</li> </ol>	<ol style="list-style-type: none"> <li>1. Calibrate again, oven and then self-calibration or change.</li> <li>2. Self-calibration again</li> </ol>
When second mount & demount, the error will exceed 10g.	<ol style="list-style-type: none"> <li>1. Wheel internal hole irregular</li> <li>2. Flange disk assemble not properly</li> </ol>	<ol style="list-style-type: none"> <li>1. Change the wheel</li> <li>2. Check the assemble surface and try again.</li> </ol>

7.4 OPTIONAL ACCESSORIES OF THE WHEEL BALANCER

**STANDARD ACCESSORIES OF THE WHEEL BALANCER**



**OPTIONAL ACCESSORIES OF THE WHEEL BALANCER**



**CONTENT LIST OF ACCESSORIES SUPPLIED WITH DWB953 WHEEL BALANCER**

Weight Pliers .....	1 off
(Br)eadth Measuring Scale .....	1 off
Centering Cone .....	4 off
Quick Nut .....	1 off
Threaded Shaft .....	1 off
M10X160 Screw .....	1 off
Calibration Weight .....	1 off
Bowl .....	1 off
Bowl Protective Cover .....	1 off
Spring .....	1 off
Protective Cover .....	1 off
Weight Position Gauge .....	1 off

## 8. MAINTENANCE



WARNING

The manufacturer declines all responsibility in the event of claims resulting from the use of non-original spare parts or accessories.



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. opened for the test, so insert a screwdriver and check the sound produced. As the bearing acts as a clamping support, it is not easy to change or take out the grease. In addition, the rotation speed is not high for the machine, so it is not necessary to change the grease. If you notice an incorrect working or a noisy bearing, replace the bearing. If the customer confirms that the bearing has not been replaced, just change the grease, then disassemble the bearing, open the dust guard ring and add the grease (XHP103), carrying out these operations under the guidance of a professional. Calibrate the machine after replacing the bearing. If the operation has not been carried out correctly, the machine precision will be affected, so reposition the dust guard ring, reassemble the machine and repeat the adjustment.

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 range clean. These components can be cleaned using a brush previously dipped in environmentally friendly solvents. Handle cones and ranges carefully so as to avoid accidental dropping and subsequent damage that would affect centring accuracy. After use, store cones and ranges 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.

### USING THE GREASE

#### Greasing the wheel balancer

The only rotating parts of the wheel balancer are the motor and the balancing shaft, so the bearing of these components must be checked periodically by the operator and greased. If the machine is used frequently (more than two hours per day), check the bearing every year; if the machine is not used so often, the check can be made every two years. The bearing cannot be

wheel balancer  
Mobilgrease XHP  
NLGI degree  
Type of thickener  
Colour, appearance  
Penetration on the processed item 25°, ASTM D 217, mm/10  
Dropping point, °C, ASTM D 2265  
Viscosity oil base, ASTM D 445, cSt @ 40°C  
Change of penetration consistency, ASMT D 1831 (established upon the rolling of the greases), mm/10  
4 spheres test, impression diam., ASTM D 2266, mm  
4 spheres test, welding load, ASTM D 2509, kg  
Test Timken OK load, ASTM D 2509, lb  
Stability of oxidation bomb method, ASTM D 942, pressure  
drop at 100 hours, kPa  
Corrosion prevention, ASTM D 1743  
Emcor rust, IP 220, wash away with acid water

When purchasing this product, your distributor will 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.


**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.

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.

If the machines have the crossed-out bin symbol




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

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).

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

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

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.

**FIREFIGHTING MEANS TO BE USED**

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

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.

- 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.

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

- Flammable liquids
- Water NO
- Foam YES
- Powder YES
- CO2 YES

Contact your local distributor to obtain information on the collection procedures at the end of the life of your product.

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.

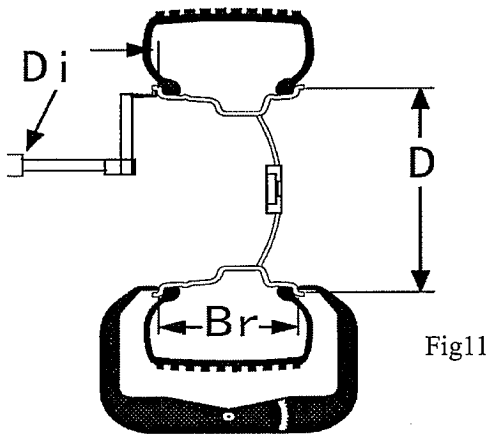


Fig11

## 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 insides 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 Br value means the rim distance. 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,



you can 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 to adjust the displayed in the right side display window until the displayed value to be the rim diameter value. You can also use to realize the conversion of the Br unit.

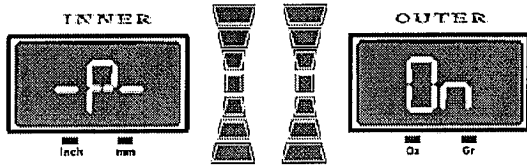
4. Lower down the protective cover (you can also press the start key). After the machine start, rotate and test, it will automatic stops. In the left /right window, the corresponding values will be displayed. Rotate the tire, when all the position indication lamps light. Pls add the weight corresponding 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 MACHINE PARAMETER SETUP

Press program key to enter the program set-up menu.

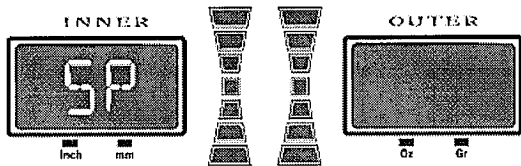


1.1 -p- (protective cover set) press key to confirm the enter.

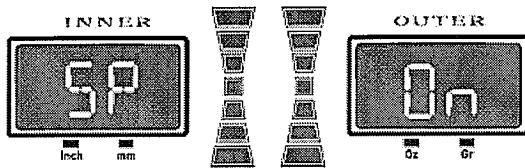


Select key to setup the on and off of the protective cover . Press

1.2 -SP-( protective cover function set),



Press key to confirm the enter.



Select key to setup the on and off of the protective cover control function . Press

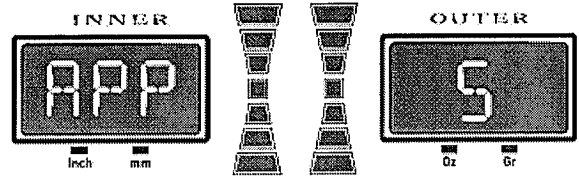
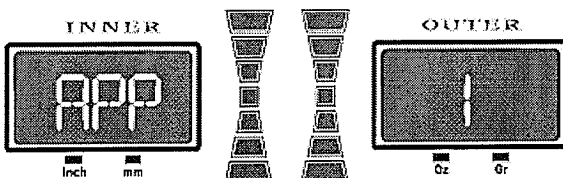
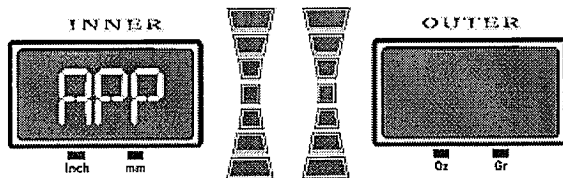
Press to confirm.

1.3 APP(minimum unbalance value setup) Press

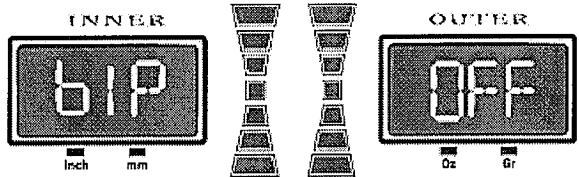
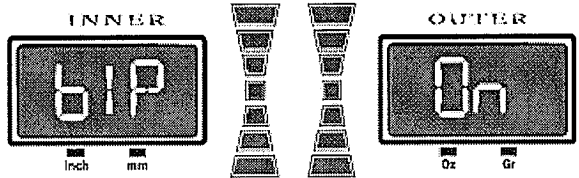
can enter to setup the unit of 1Gr and 5Gr. All adopts diagraph not arrow.

Press confirm enter, pres , to adjust the selection of the corresponding unit. Press

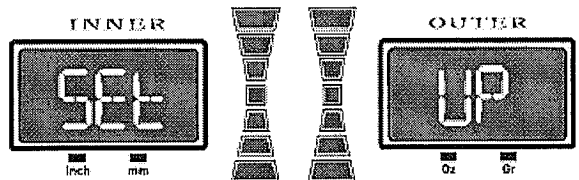
to adjust.



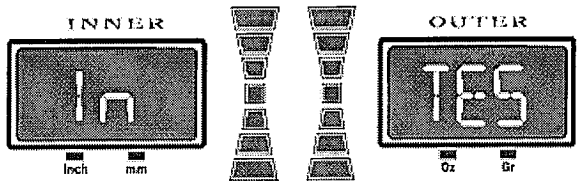
1.4 BIP (beeper setup) press can setup on/off of the beeper.



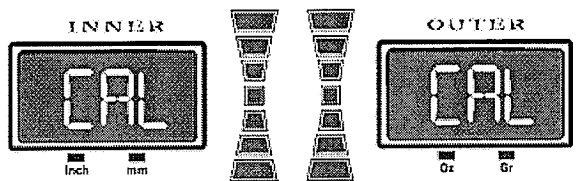
1.5 Press the to enter into the next level



"UP"—"Ent" press key to enter the special functionsetup. There are 2 optional selection "IN"—"TES" and "CAL"—"CAL"



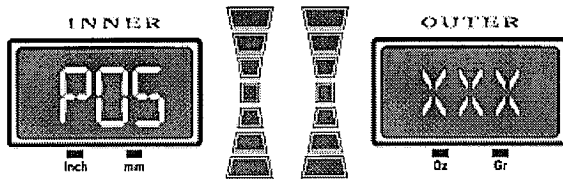
Press to enter.



In the state of I N"—"T E S", press to enter into the test test.

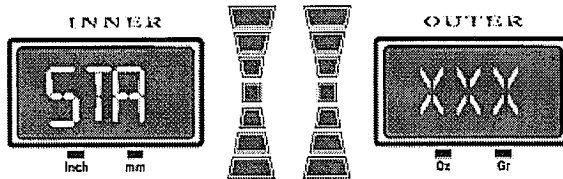
In the state of POS, rotate the tire clockwise. The

value in the right window will increase. If counterclockwise, it will decrease.

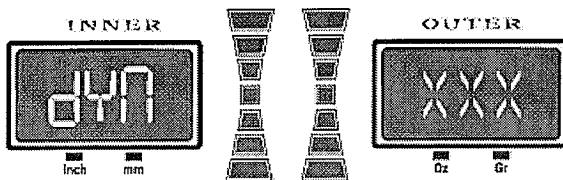


In the state of STA, press piezoelectric sensor vertical to the main shaft. And the value in the right window will increase. When loose your hand, the value will decrease. This means the installation of the sensor is correct.


In the state of STA, press pie

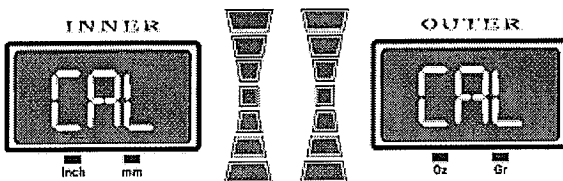




zoelectric sensor parallel to the main shaft. And the value in the right window will increase. When loose your hand, the value will decrease. This means the installation of the sensor is correct.



### 9.3 Customer self-calibration

In the state of IN TES, press  you can enter into CAL -CAL which means the state of customer self-calibration state. This function should be applied when long time no use of the machine or the machine has lost the accuracy.

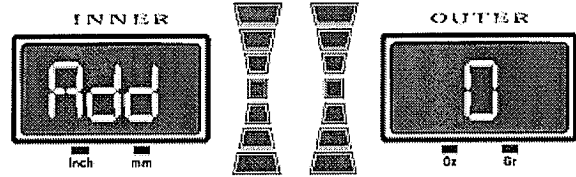



Press  to enter into program. Press 

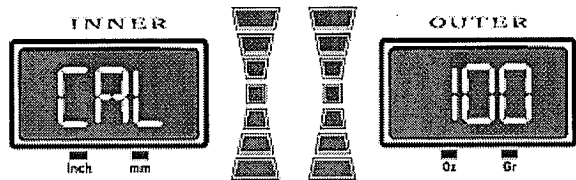
once again to confirm.


Enter into this function can be executed after entering the parameters of the tire. You can press &hold on display key

After 5seconds, you will enter into that situation.



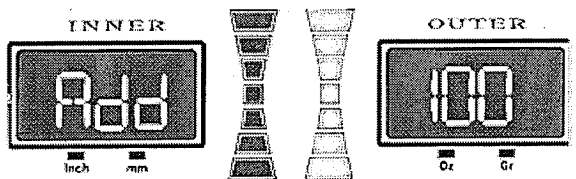
Press  to enter and the display will display "ADD"- "0"



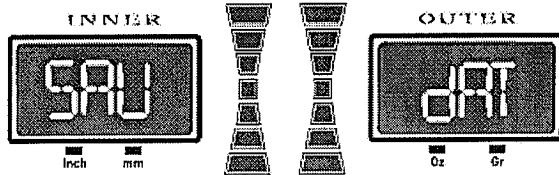
Press  to spin the tire/rim for one time at first.

"ADD"- "100" will be displayed, then use hand to rotate the tire. When the right indication lamps all light., add 100g of weight on the 12 clock of the outer tire. If not this position, the angle machine calculated will be inaccuracy and furthermore influence the measurement accuracy of the machine. Restart the machine can realize the self-calibration of the


machine. Press  to start the machine.



After customer self-calibration, the display will display "SAU"- "DAT" customer self-calibration is completed.

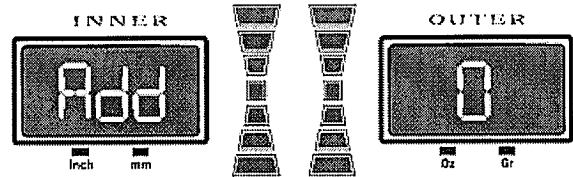


This time we enter into the accurate factory calibration.


Press the start key  to start. The machine will automatic break after rotation. The display will display.

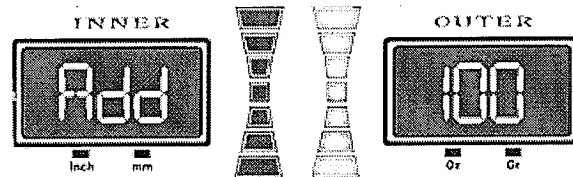
#### 9.4 MACHINE ACCURATE CALIBRATION

Normally, we do not use this function. When the machine can not achieve the satisfied accuracy after the customer self-calibration, we can use this function. Before use, please strictly follow the following steps to calibrate. The inappropriate calibration can cause mistakes.

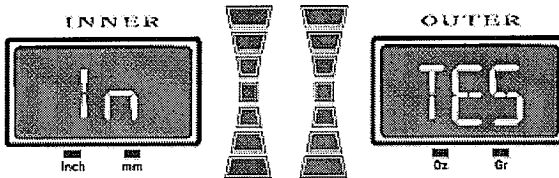



At this moment, when the right indication lamps all light, add a weight of 100g on the 12 clock position of the tire and then start.

In the test state "IN"\_"TES", press the enter key  to wnter into "POS"

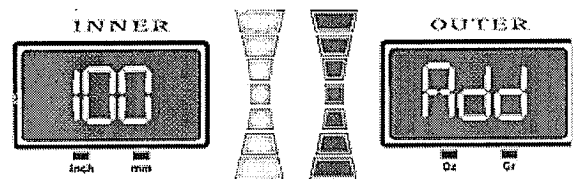


Rotation stops and the display will display "100"- "add"



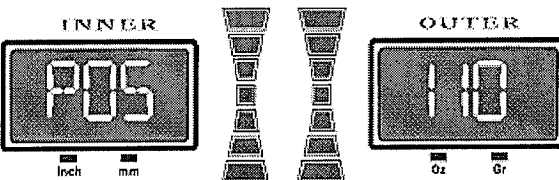
At this moment, when the left indication lamps all light, add a weight of 100g on the 12 clock position of the tire and then press  to start.

When rotating the tire, the POS will also corresponding change, when the display of POS

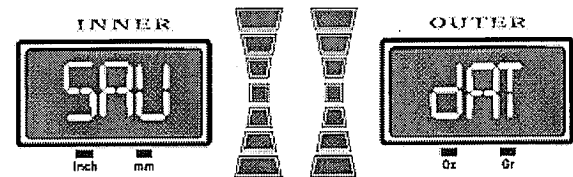


After the rotation stops, the display will display. If the beeper starts, there will be a whistle. The factory self-calibration completed and the machine restores the accuracy.

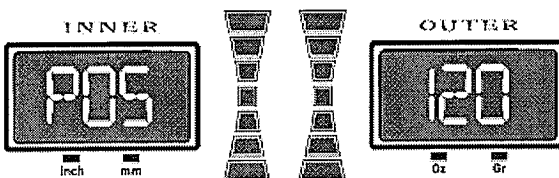
is "110", press  key.



Then continue forward and backward rotate the tire. When the display of POS changes to "120",



you can press  key again.

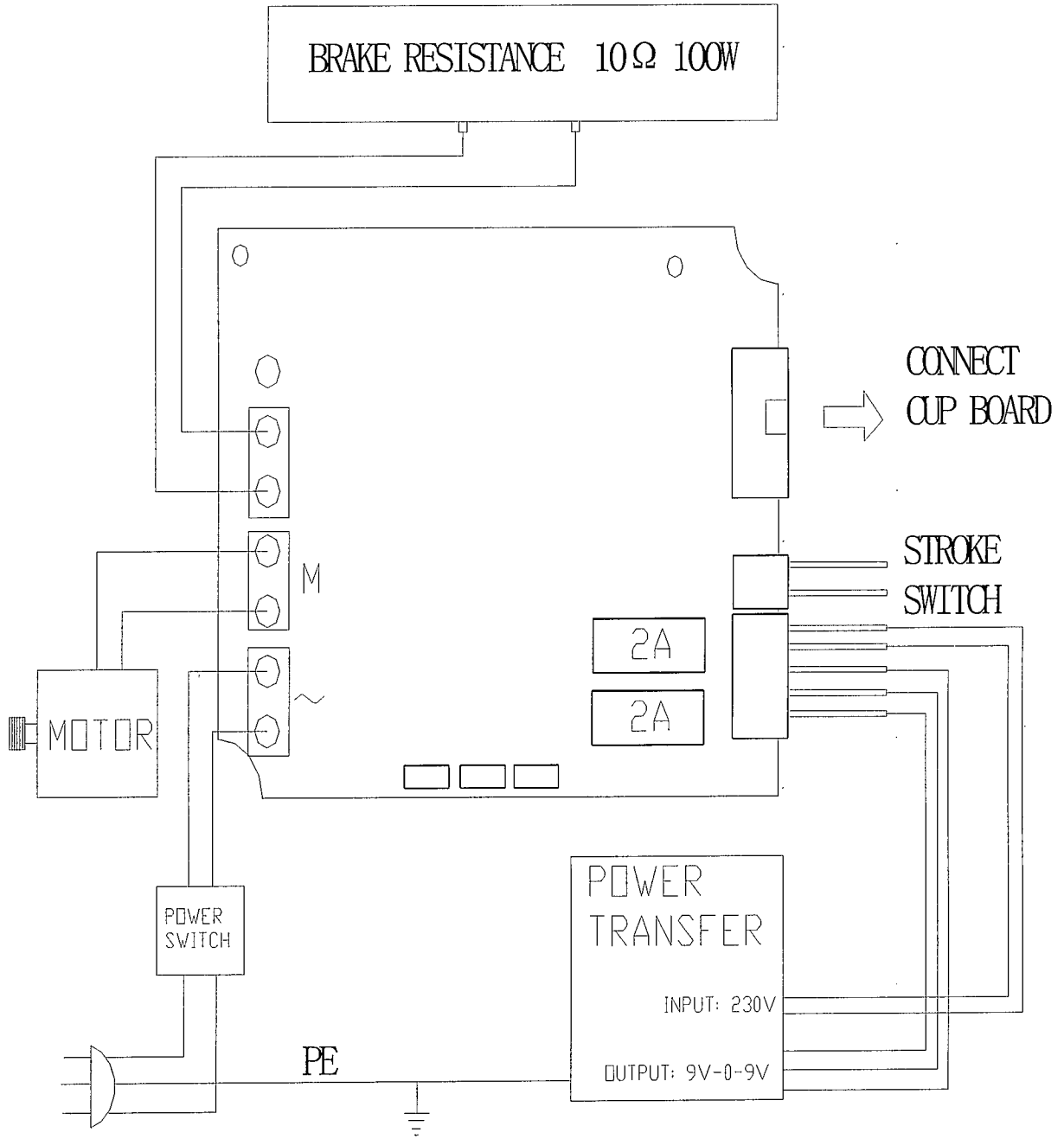




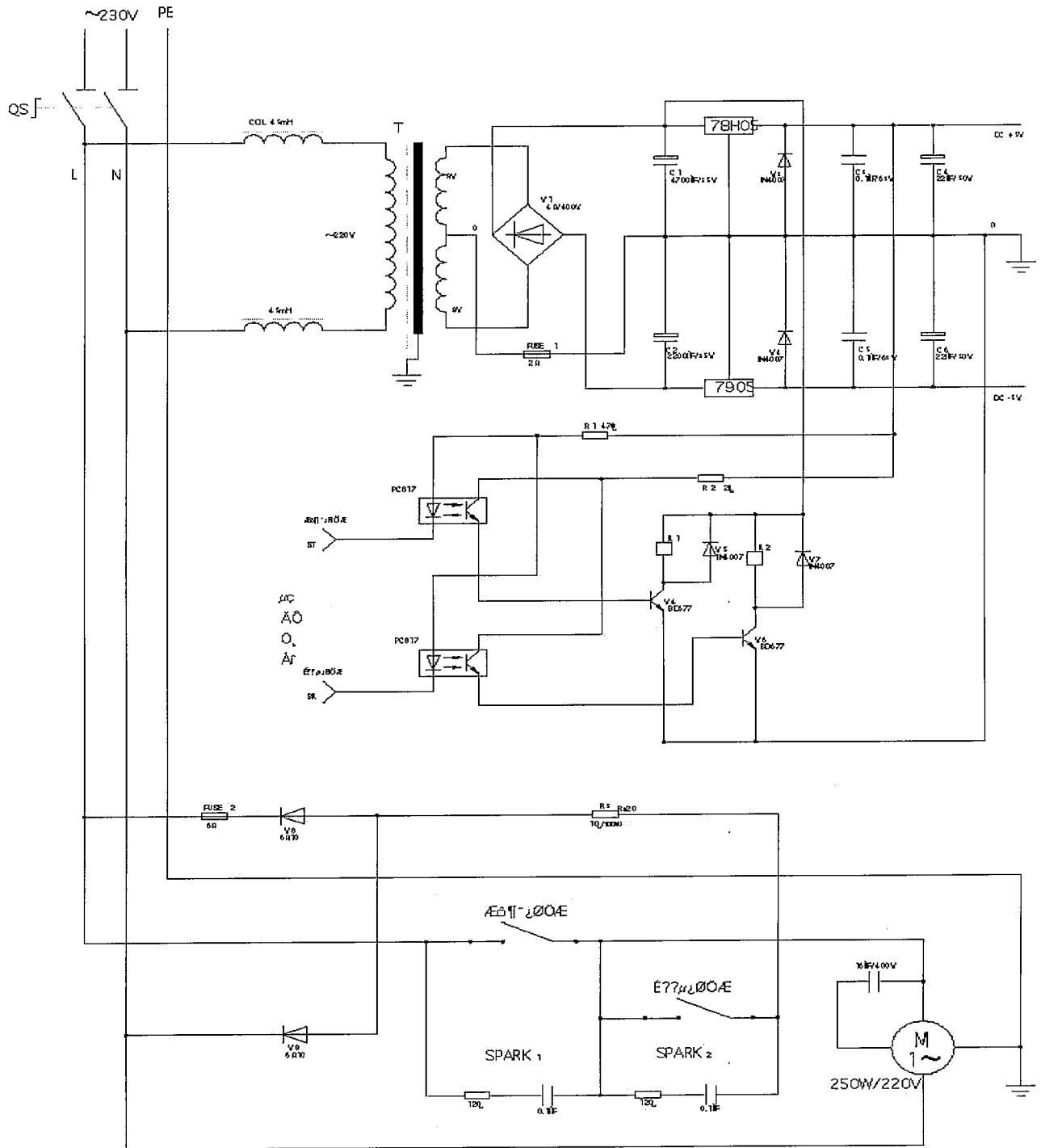
APPENDIX 1

LAYOUT OF THE POWER SUPPLY CARD-

DRAWING FOR POWER SUPPLY  
CONNECTION OF WHEEL BALLANCER

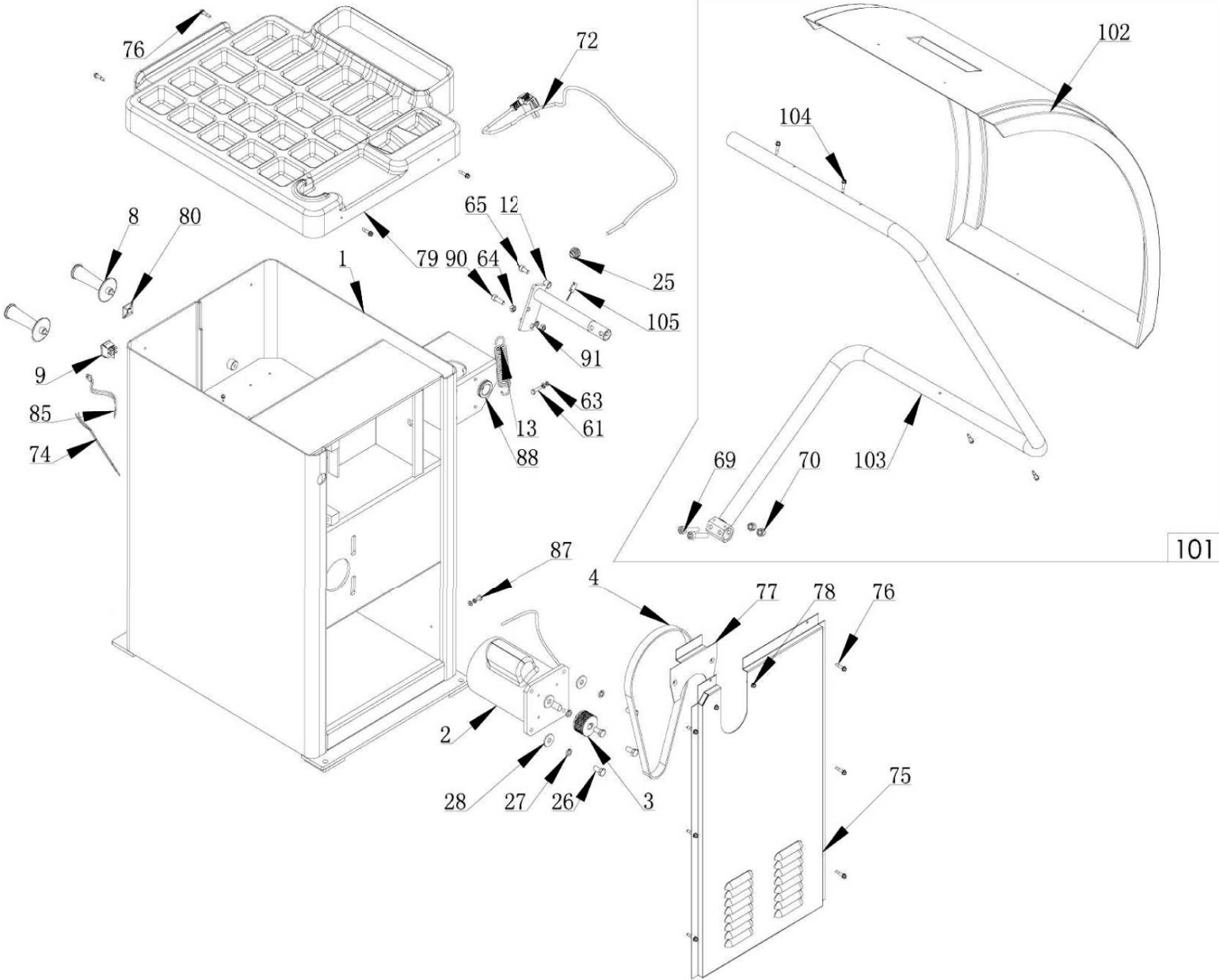


## APPENDIX 2 Wiring Diagram

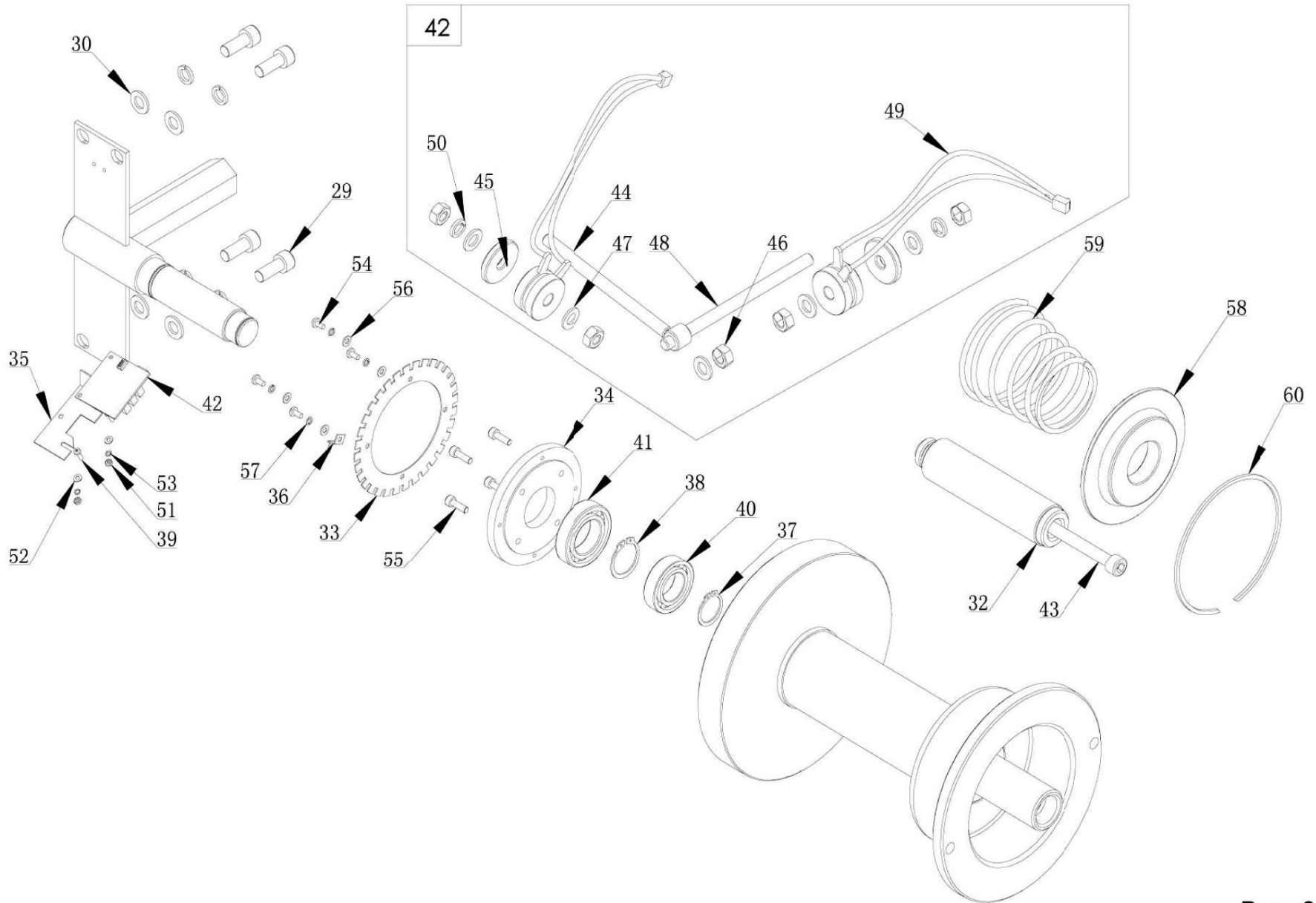




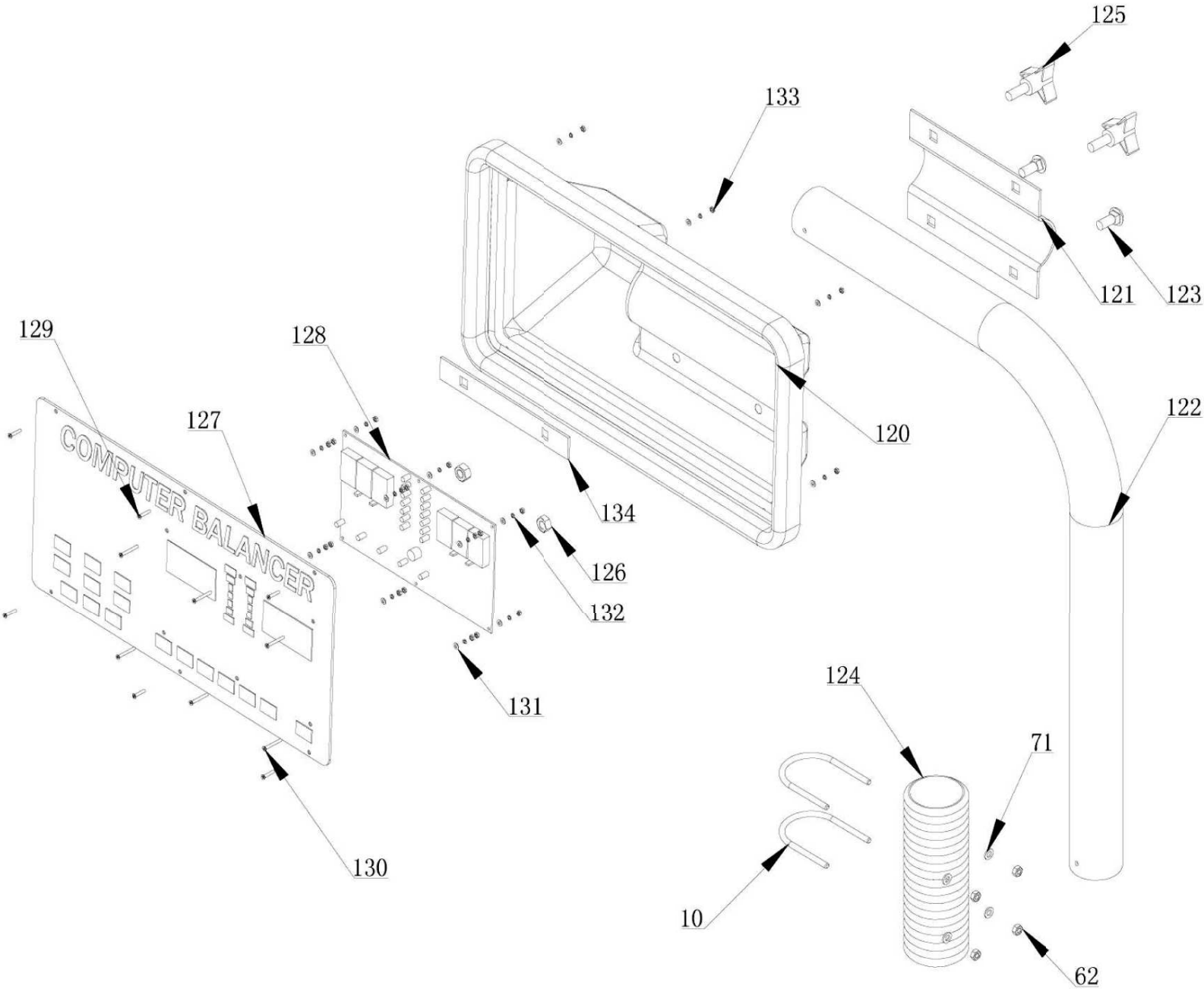
# WB-953



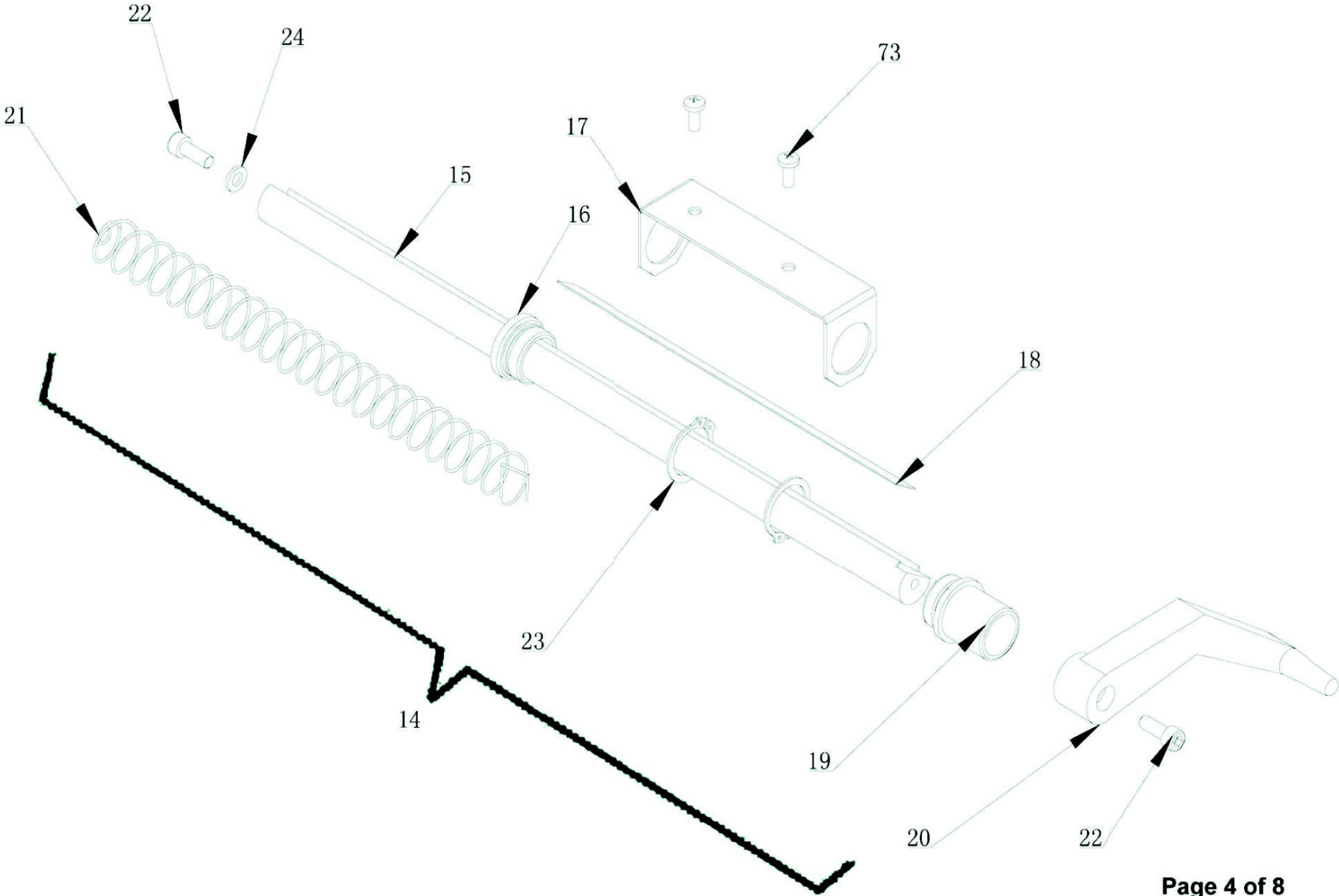
# WB-953



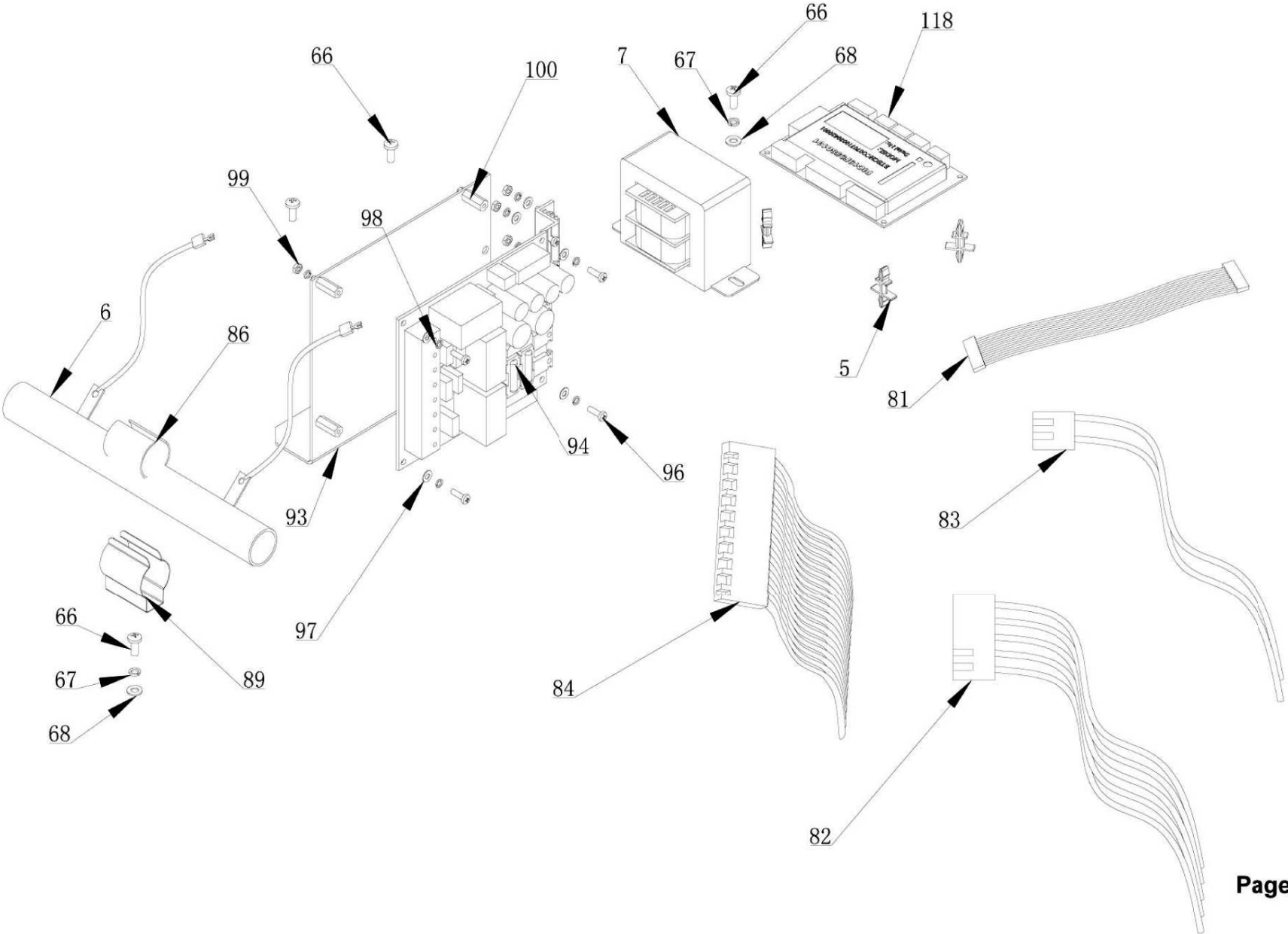
# WB-953



# WB-953

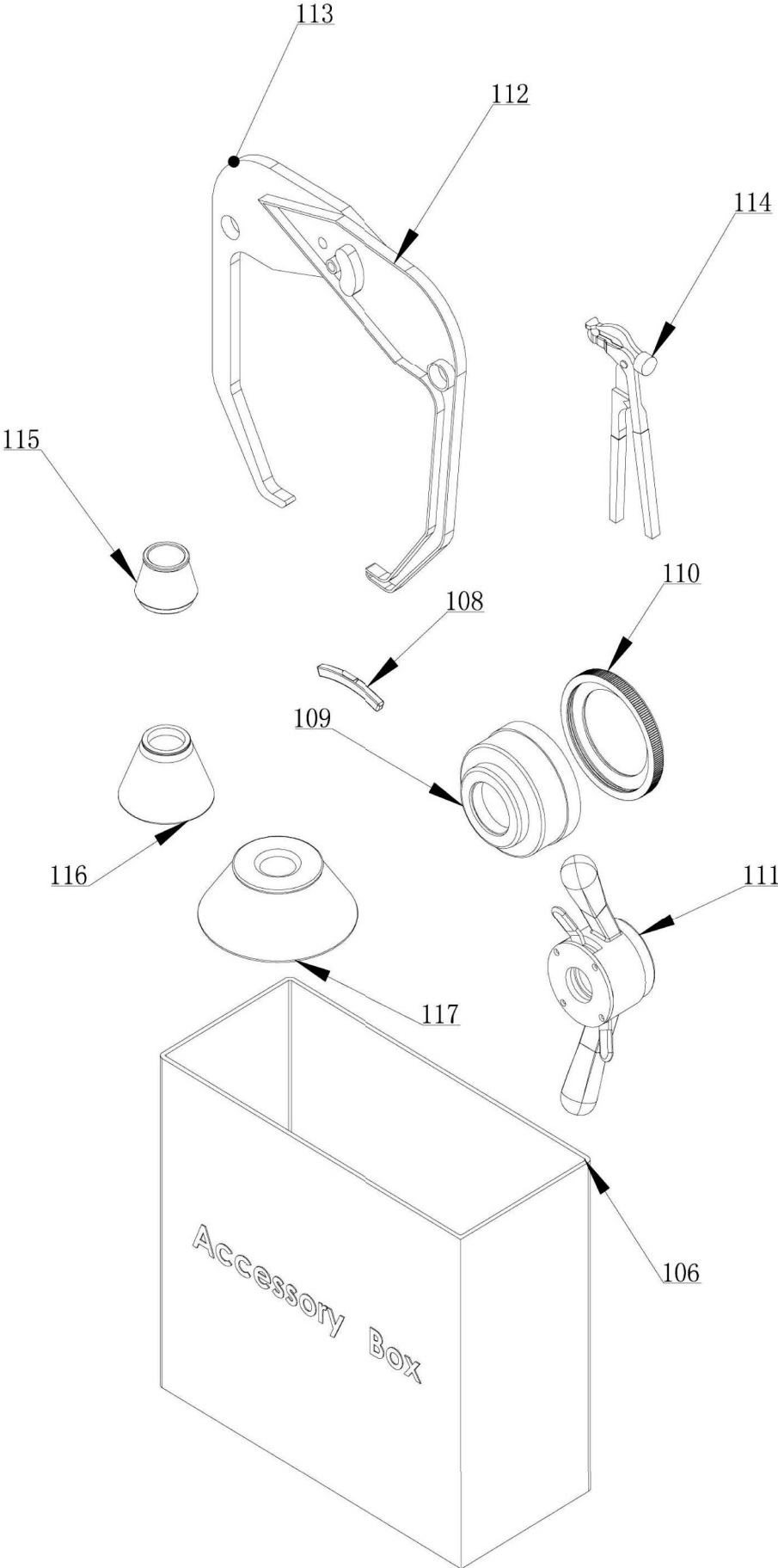


# WB-953





# WB-953



# WB-953

## Spare Parts List

ITEM	PART CODE	DESCRIPTION	QTY
1	WB-1060-101	BODY	1
2	WB-1030-7009	MOTOR	1
3	WB-1030-7007	COUNTER PULLEY	1
4	WB-1030-7003	BELT	1
5	WB-1030-7012	NYLON SPACER	4
6	WB-1030-7015	RESISTOR	1
7	WB-1030-7011	TRANSFORMER	1
8	WB-1030-7020	HANDLE	2
9	WB-1030-7059	POWER SWITCH	1
10	WB-1060-140	U-CLAMP	2
12	WB-953-018	SUPPORT SHAFT	1
13	WB-953-017	SPRING	1
14	WB-1030-7113	SCALE ASSEMBLY	1
15	WB-1030-7027	SCALE ROD	1
16	WB-1030-7032	GUIDE	1
17	WB-1030-7030	SCALE SUPPORT	1
18	WB-953-061	MEASURING TAPE	1
19	WB-1030-7028	SPACER	1
20	WB-1030-7026	SCALE HANDLE	1
21	WB-1030-7033	SPRING	1
22	WB-1030-7025	BOLT, M6 X 16	2
23	WB-1030-7029	SNAP RING, # 25	2

ITEM	PART CODE	DESCRIPTION	QTY
24	WB-1030-7034	FLAT WASHER, # 6	1
25	WB-953-002	ELECTRICAL BULKHEAD FITTING	1
26	WB-1030-7025	BOLT, M6 X 16	4
27	TC-530-9119	LOCK WASHER, # 6	8
28	TC-530-9142	FLAT WASHER, # 6	4
29	WB-1030-7081	BOLT, M10 X 20	4
30	WB-1030-7079	FLAT WASHER, # 10	4
32	WB-1030-7061	THREADED ROD	1
33	WB-1030-7074	ENCODER DISK	1
34	WB-1030-7068	BEARING COVER	1
35	WB-1030-7084	ADJUSTABLE PLATE	1
36	WB-953-090	TOOTH, ENCODER DISK	1
37	WB-1030-7075	SNAP RING, # 25	1
38	WB-1030-7071	SNAP RING, # 30	1
39	WB-1030-7120	Screw	2
40	WB-1030-7076	BEARING	1
41	WB-1030-7077	BEARING	1
42	WB-1030-7118	SENSOR ASSEMBLY	1
43	WB-1030-7060	BOLT, M10 X 160	1
44	WB-1030-7085	SENSOR SHAFT (HORIZONTAL)	1
45	WB-1030-7087	FLAT WASHER	2

ITEM	PART CODE	DESCRIPTION	QTY
46	WB-1030-7086	NUT, M10	5
47	WB-1030-7079	FLAT WASHER, # 10	5
48	WB-1030-7091	SENSOR SHAFT (VERTICAL)	1
49	WB-1030-7088	PIEZO SENSOR	2
50	WB-1030-7080	LOCK WASHER, # 10	2
51	WB-1030-7107	NUT, M3	2
52	WB-1030-7109	FLAT WASHER, # 3	2
53	WB-1030-7108	LOCK WASHER, # 3	2
54	WB-953-104	Screw	4
55	WB-1030-7069	BOLT, M5 X 16	4
56	WB-1030-7072	FLAT WASHER, # 4	4
57	WB-1030-7105	LOCK WASHER, # 4	4
58	WB-953-138	COVER	1
59	WB-953-137	SPRING	1
60	WB-953-139	SNAP RING	1
61	WB-953-015	BOLT, M6 X 20	1
62	TC-530-9269	NUT, M6	5
63	TC-530-9142	FLAT WASHER, # 6	2
64	TC-530-9297	NUT, M8	2
65	TC-530-9164	BOLT, M8 X 20	1
66	TC-530-9090	SCREW, M4 X 12	5

# WB-953

## Spare Parts List

ITEM	PART CODE	DESCRIPTION	QTY
67	WB-1030-7105	LOCK WASHER, #4	5
68	WB-1030-7072	FLAT WASHER, #4	5
69	TC-530-9322	BOLT, M10 X 50	2
70	TC-530-9185	LOCKNUT, M10	2
71	WB-1030-7034	FLAT WASHER, #6	5
72	WB-1030-7010	POWER CABLE	1
73	WB-1030-7031	SCREW, M5 X 12	2
74	WB-953-057	WIRING HARNESS (POWER SWITCH - POWER BOARD)	1
75	WB-1060-109	SIDE PANEL	1
76	WB-1030-7037	SELF TAPPING BOLT, M5 X 12	10
77	WB-1060-110	COVER	1
78	WB-1030-7037	SELF TAPPING BOLT, M5 X 12	2
79	WB-1060-152	WEIGHT TRAY	1
80	WB-953-080	WIRE RETAINER	2
81	WB-953-059	WIRING HARNESS (COMPUTER BOARD - DISPLAY BOARD)	1
82	WB-953-054	WIRING HARNESS (COMPUTER BOARD - ENCODER BOARD)	1
83	WB-953-055	WIRING HARNESS (COMPUTER BOARD - SENSORS)	1
84	WB-953-058	WIRING HARNESS (COMPUTER BOARD - POWER BOARD)	1
85	WB-953-049	WIRING HARNESS (HOOD SWITCH - POWER BOARD)	1
86	WB-1030-7014	INSULATION PAPER	1
87	TC-530-9149	SCREW, M5 X 16	1

ITEM	PART CODE	DESCRIPTION	QTY
88	WB-953-088	BUSHING	2
89	WB-1030-7016	RESISTOR CLAMP	1
90	WB-1030-7006	BOLT, M8 X 25	1
91	WB-1030-7004	FLAT WASHER, # 8	1
93	WB-953-041	MOUNT PLATE	1
94	WB-953-040	POWER BOARD	1
96	WB-953-038	SCREW, M3 X 8	9
97	WB-1030-7100	FLAT WASHER, # 3	9
98	WB-1030-7108	LOCK WASHER, # 3	13
99	WB-1030-7107	NUT, M3	9
100	WB-953-042	SPACER	4
101	WB-953-HD-1	HOOD ASSEMBLY	1
102	WB-1030-HD-2	HOOD	1
103	WB-953-080	HOOD BRACKET	1
104	WB-1030-7037	SELF TAPPING BOLT, M5 X 12	4
105	WB-953-026	LIMIT SWITCH	1
106	WB-1030-7110	ACCESSORY BOX	1
108	WB-1030-7116	100 GRAM WEIGHT	1
109	WB-1030-7102	PLASTIC BOWL	1
110	WB-953-140	PLASTIC BOWL PROTECTOR	1
111	WB-1030-7104	SPEEDNUT	1

ITEM	PART CODE	DESCRIPTION	QTY
112	WB-1030-7024	CALIPER	2
114	WB-1030-7035	HAMMER	1
115	WB-1030-7021	SMALL CONE	1
116	WB-1030-7022	MEDIUM CONE	1
117	WB-1030-7023	LARGE CONE	1
118	WB-953-047	COMPUTER BOARD	1
120	WB-953-068	DISPLAY HOUSING	1
121	WB-1060-144	MOUNTING BRACKET	1
122	WB-1060-141	DISPLAY NECK	1
123	WB-1060-142	CARRIAGE BOLT	2
124	WB-953-077	PLASTIC SLEEVE	1
125	WB-1060-143	ADJUSTMENT KNOB	2
126	TC-530-9298	NUT, M10	2
127	WB-953-065	DISPLAY PANEL	1
128	WB-953-067	DISPLAY BOARD	1
129	WB-1030-7127	SCREW, M3 X 25	6
130	WB-1030-7127	SCREW, M3 X 25	6
131	WB-1030-7128	FLAT WASHER, # 3	18
132	WB-1030-7129	LOCK WASHER, # 3	18
133	WB-1030-7130	NUT, M3	24
134	WB-1060-180	PLATE	1