

THINKCAR



THINKCAR TWB 501 Wheel Balancer

Installation Operation Service Manual

Matters needing attention :

- Please read this manual carefully before use and keep it for future reference.
- The equipment list should be checked carefully before use. If in doubt, contact Thinkcar Tech Inc immediately.
- Due to the continuous upgrading of the product, the manual and the physical have a slight difference, without notice, please prevail in kind.

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Product specification parameters

Rated voltage	220V / 50Hz
Hub diameter	10" - 30"
Hub width	1.5" - 20"
Balancing precision	1g
Balancing time	7S (20Kg wheel)
Maxium tire weigh	65Kg
Motor power	250W
Working noise	70db
Carton size	970*770*1150mm
Gross weight	200KG

Please check the products immediately after unpacking to ensure that they are in good condition.

Chapter I Safety Precautions

1. Incorrect operation may cause personal injury and equipment damage.
2. Please read carefully and understand all the contents of the instructions before use.
3. Please ensure that children and other unauthorized personnel stay away from the work area.
4. Ensure that the equipment is connected to the correct power and air source, and is reliably grounded.
5. Please use this equipment on a flat, level, dry and reliable bearing plane.
6. Avoid accidental startup. Please ensure that the equipment is turned off and the electrical source is disconnected before maintenance.
7. Keep the protection device and safety device in the correct position and keep working normally.
8. Keep the work area clean and well lit. Chaos or dark areas may cause accidents.
9. It is strictly prohibited to overload this product, otherwise the resulting accident liability will not be covered by the insurance.
10. Please keep away from heat and fire source. High temperature may cause damage to this equipment and sealing elements.
11. Avoid dangerous environment. Do not use equipment in humid environment or expose it to rain.
12. It is strictly prohibited for any untrained personnel to use this equipment, and it is not allowed to disassemble or refit this equipment voluntarily.
13. Ensure that the wheels are installed correctly, and correct way is selected according to different wheel hubs to lock and fix them on the equipment.

14. Check carefully before each use. If there is oil leakage, loosen or damaged parts and accessories, they cannot be used.
15. Please let professionals with professional maintenance qualifications maintain the equipment reasonably. If accessory replacement is required, please use original accessory.
16. Safety shoes, safety goggles and working gloves conforming to relevant national safety regulations for safety protection must be worn during operation.
17. It is strictly prohibited to use the equipment after drinking, mental fatigue, inattention, drowsiness and any unconsciousness caused by drugs.
18. Before balancing, the tire and rim shall be checked for potential defects; it is prohibited to balance any defective tire and rim.
19. The tire weight shall not exceed the bearing capacity of the balancing machine as overweight of the wheel may damage the balancing machine permanently; the balancing machine shall not be used for tires larger than design dimensions.



Warning:

The notices, warnings, instructions and other information contained in the instructions cannot cover all possible situations. Operators must understand that daily prudent operation and professional knowledge are indispensable factors in operating this product.

1.1 Definition of risk level

Risk level referred to in the Manual applies to the following definitions and signs. Danger: Refers to direct dangers, which may cause serious personal injury or death.



Warning: Refers to danger or unsafe behavior, which may cause serious personal injury or death.



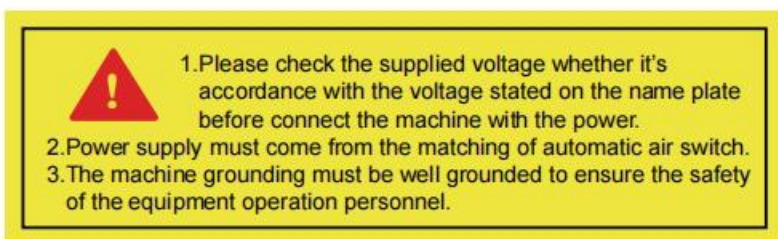
Notice: Refers to danger or unsafety, which may cause minor personal injury or product or property loss.



Caution: Watch out ! Which may endanger your safety or others



1.2 Sign and nameplate



Warning sign for power on



Sign for power supply specifications



Sign for rotation of transmission components

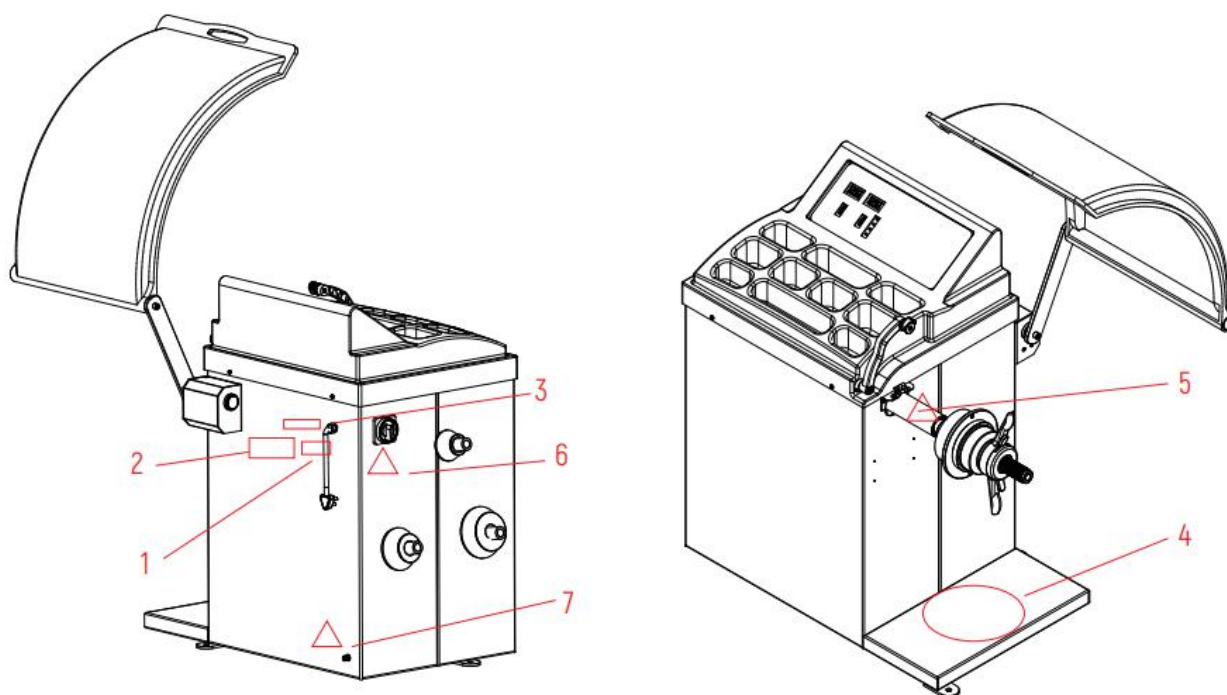


Sign for electric shock



Sign for grounding power supply

1.3 Position of sign and nameplate



Note: Please check and confirm whether the signs and nameplates are clear and complete according to the diagram above, and check whether the corresponding position is correct. In case of missing or incorrect position, please contact the local dealer.

1.4 Standard safety equipment

The equipment can stop the rotation of main rotating axle and tire under emergency.



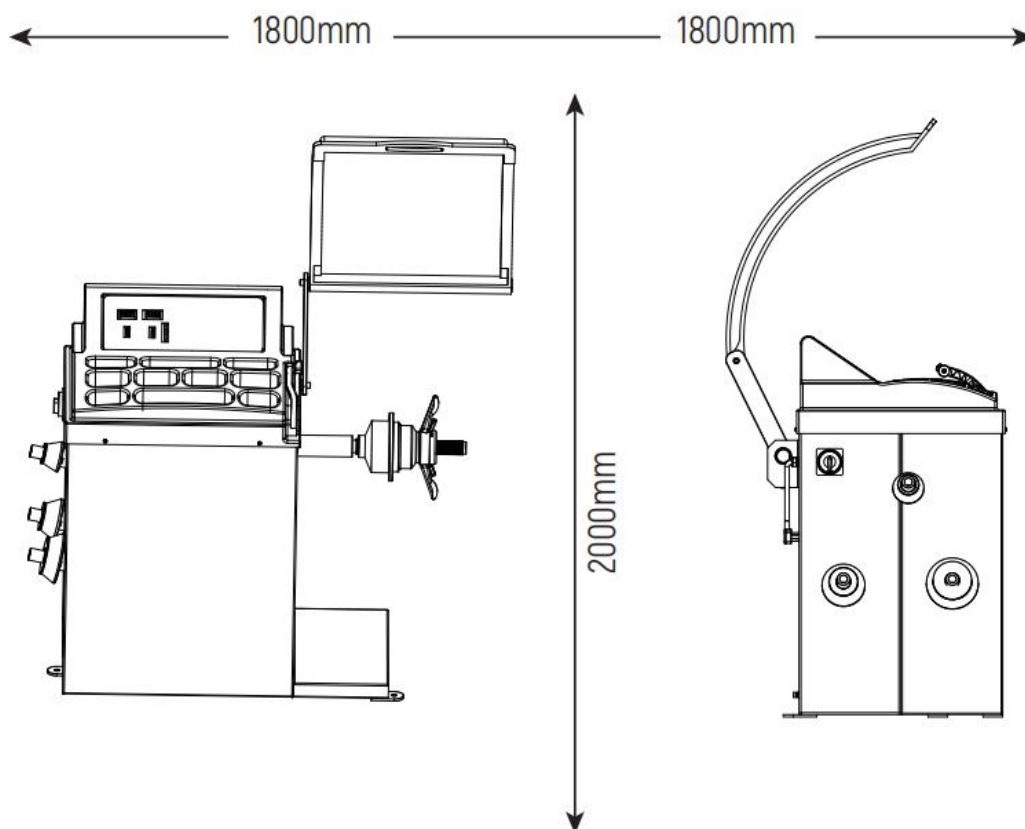
Chapter II Installation Instruction

The installation of tire balancing machine must be completed by professionals. Safe and effective use depends on correct installation. If you have any questions, please contact the authorized dealer of Coseng.

2.1 Equipment size and use space

- The tire balancing machine must be placed on a firm flat floor and fixed with bolts.

- The installation position of the tire balancing machine must be kept away from the damp environment, and must be close to the power supply.
- Enough space must be reserved behind the selected position to ensure normal working of protective cover.
- At least 500 mm operating space must be reserved on the right and front of the tire balancing machine for tire dismounting and testing.

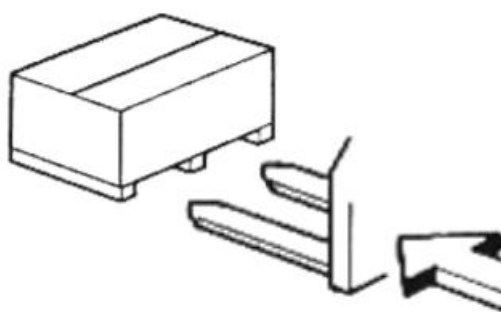


2.2 Safety rules

- This equipment shall be operated by professionals or trained personnel.
- The company will not be responsible for unauthorized movement of equipment (especially for electrical parts).
- Any treatment for electrical parts can only be carried out by professionals.

2.3 Transportation/unpacking

- Forklift handling is adopted, and moving position is as shown in the following figure.

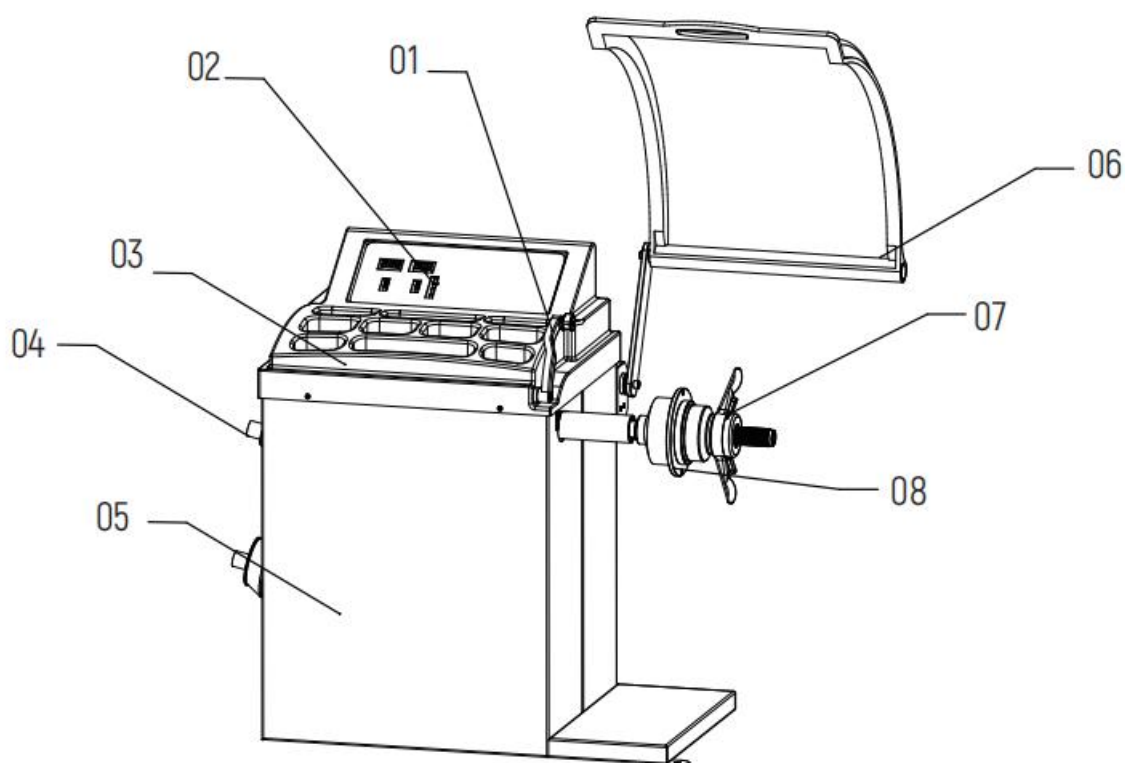


- Unpack and check whether the equipment is damaged.
- Keep packing materials away from children to avoid danger.



Note: The surface of the equipment is coated with a layer of special anti-rust oil, which is easy to be coated with dust and shall be wiped off as much as possible when necessary.

2.4 Product diagram



01. Body assembly; 02. Automatic pull rod; 03. Upper cover; 04. Display pane; 05. Box
06. Protective cover; 07. Self-locking nut; 08. Drive shaft assembly

2.5 Standard accessories



Balance plier



Self-calibration lead (100g)



Instructions

5 mm Allen wrench 8 mm
Allen wrench

Caliper



100-132mm



74-109mm



54-79mm



44-65mm



Half nuts



Screw rod of main axle



Screw



Rubber washer of half nut



Pressure ring of half nut

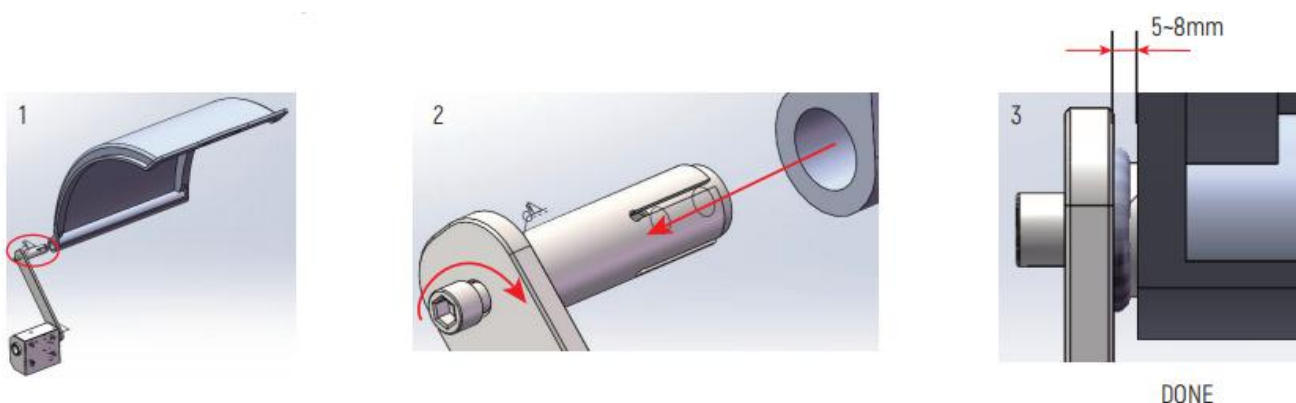


Plastic bowl

2.6 Mounting of protective cover

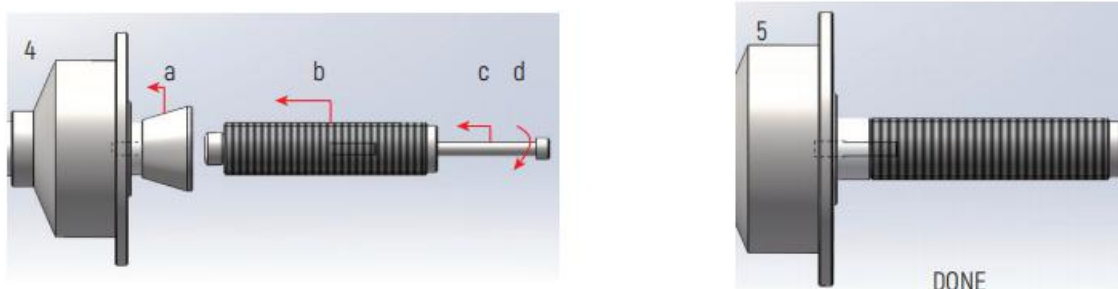
Instructions on protective cover installation

1. Keep the adjusting end of protective cover link mechanism perpendicular to the tank, and form an angle of 60° on the other end. Lock the screw tightly to avoid loosening.
2. Take out the protective cover and adjust it to the position 460 mm away from the screw rod as shown in the diagram, and then lock the screw tightly to avoid loosening.
3. Complete the installation, and keep it opening.



2.7 For installation of screw rod

Install the screw before it must first be two matched on the surface of the oil and other foreign bodies clean, so as not to affect the accuracy of measurement. The lead screw shall be fixed onto the balance axle with a spanner and a screw rod, as shown in the diagram.



2.8 Power source connection

- Before energizing, check whether the network voltage is consistent with the voltage value indicated on the equipment label.
- When connecting the equipment with the electrical system, the electrical system must be provided with a line safety device.
- When connecting the power supply line with the socket, a reliable grounding wire must be provided.
- Good cover grounding protection must be provided.
- Main power supply must be provided with an automatic leakage control opening contact, and voltage stabilizer must be provided in the area where the power supply voltage is instable.

2.9 Complete machine test

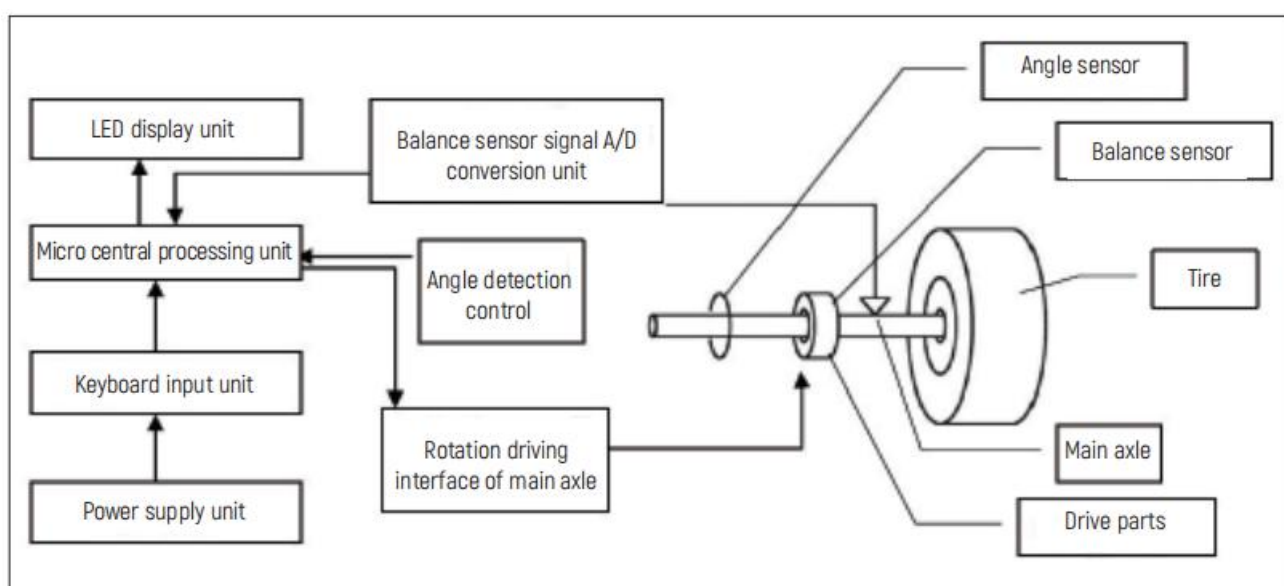
- Replace the protective cover, and press "START" key. The rotation direction of transmission components of the balancing machine shall be consistent with that indicated on the label (clockwise direction). Note: After the first short rotation cycle, the data displayed on the panel can be ignored.

- In a rotation cycle, the interlocking system can be verified for normal operation by replacing or lifting up the protective cover.

Chapter III Overview of Tire Balancing Machine

Only when the micro central processor displays a “OK” message after checking that all equipment units work normally, the user can perform the balance operation.

When performing the balance operation, the micro processor controls the main axle rotation of the balancing machine via the driving interface, and the unbalance signal detected by a balance sensor is transmitted to the micro processor port via the A/D converter, so that the processor can calculate the unbalance value through overall analysis both of unbalance signal and main axle angle signal, and display it via a LED unit. Man-machine dialogue can be realized through the keyboard and LED unit.



3.1 Description of parameters

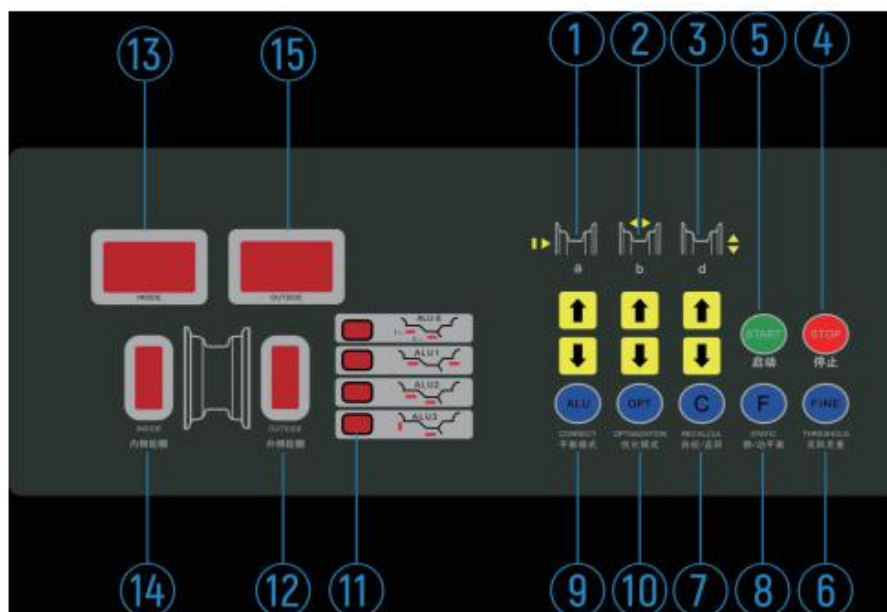
The series of balancing machine can be used for balancing of general tire and special vehicle tires (jigs must be purchased separately).

- When the manual measuring tape is drawn out along the rim and maintained on it, the distance reading (i.e., the offset measurement referred to in the Manual) shall be read, and the tire diameter on the tire label shall be checked or measured with a caliper. All measured values shall be entered into the computer. The distance value measured (offset value) provides the inner plane position of dynamic balance to the computer. The diameter value measured provides the distance from the hub center for weight application to the
- computer.
- When inputting the hub width into the computer, it will be added to the offset measurement automatically to determine outer plane of the hub. The hub width is input by the operator manually as W measurement.
- When the balancing machine detects any unbalance during wheel rotation, the computer will calculate the weight necessary for unbalance calibration and its application position. When the

weight necessary for unbalance calibration is displayed on the control panel, the alignment light will help the operator with alignment of weight application necessary for unbalance calibration. Weight display and alignment light indicate the inner and outer plane calibration weights and positions, respectively.

Chapter IV Operating Instructions

4.1 Operation interface



1. Distance enter key
2. Width enter key
3. Diameter enter key
4. Emergency stop key
5. Start key
6. Display actual unbalance value (less than 5g)
7. Recalculation key
8. Dynamic and static mode switch key
9. Balance mode selection function key
10. Select "optimization"
11. Display the balance mode
12. Display the outer unbalance position on outer
13. Display the inner unbalance value
14. Display the inner unbalance position
15. Display the outer unbalance value

Function of main combination keys:

- Press [C] + [F] key, and then press [START] key for self-calibration only when the light stops flashing.
- In state of unbalance value display, Press [F] + [a-] key to convert from unbalance value in g to that in oz.

- When [b] key is pressed, press [C]+[b+]or [b-] key to convert from rim width in mm to that in inch.
- When [d] key is pressed, press [C]+[d+]or [d-] keys to convert from rim diagram in mm to that in inch, and then press [OPT] key to optimize the unbalance value.
- Press [F]+[STOP] key to switch from start to cancel of instant startup function of protective cover.

Note:

1. The instant startup function of protective cover can be maintained after shutdown.
2. The function of selecting inch as the unit of rim width and rim diagram cannot be maintained after shutdown.



Note:

Press the keys with hands. To press the keys with balance plier or other sharp objects is not allowed.

4.2 Tire installation

Preinstallation preparation:

- Check and remove the dust and sand from the tire, and check whether there is metal, stone and other foreign matters;
- Check whether the tire pressure complies with the value specified;
- Check whether there is any deformation of the rim alignment plane and installation holes;
- Check whether there are foreign matters, and remove the original balance lead in the rim.

Installation mode:

There are three wheel installation methods: forward alignment, backward alignment and flange alignment specifically for large and medium tire, these methods can be selected according to actual conditions.

1) Forward alignment

Forward alignment is a common alignment method, which is easy for operation and mainly applicable for common steel rub and iron hub that features minor deformation. Installation sequence:

Main → axle (rim surface is installed inwards) → cone → opening and closing nut



2) Backward alignment

In case of large outer deformation of wheel, the backward alignment can be used to ensure steel rub and main axle alignment accuracy. The alignment method is applicable to aluminum hub, especially, those thicker aluminum hubs, and the measurement precision will be higher. Installation sequence:

Main axle → suitable cone → wheel → plastic bowl → opening and closing nut



3) Alignment via large flange (optional)

The alignment method is applicable to large wheel installation. Installation sequence:

Main axle → large flange (fixed on main axle) → wheel → large cone → quick nut



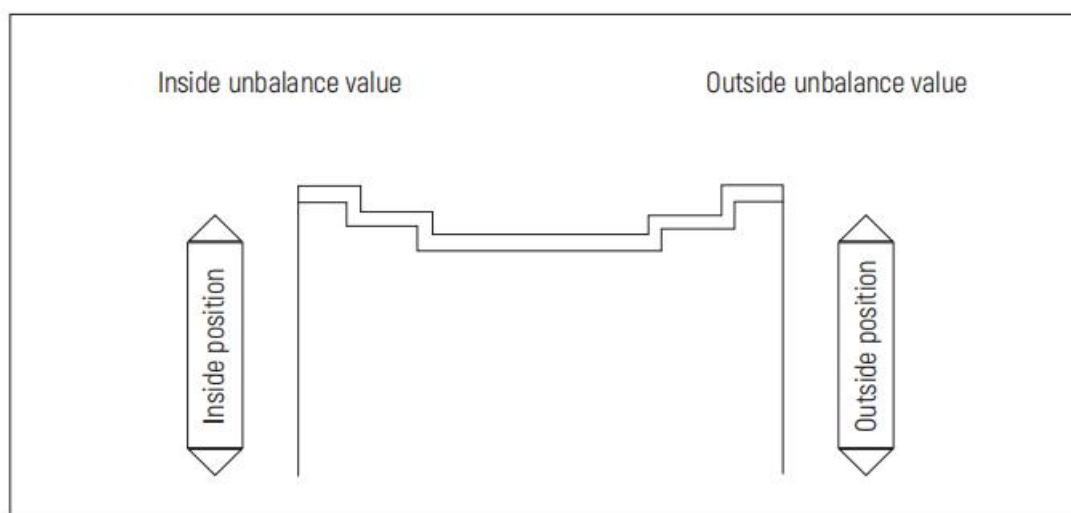
Note:

Cone selected shall be suitable to the rim center hole, and its direction; otherwise it may cause incorrect measurement.

4.3 Balance operation

Turn on the power switch, install the tire to be balanced and input the rim data. The tire starts to rotate after covering with the protective cover and pressing [START] key, and then the unbalance value will be displayed on the display after stop; the value is the weight of the balance weight to be added inside and outside, thus choose the balance weight according to the unbalance value. First, slowly turn the tire by hand until all unbalance indicators inside are on, which means that the highest point (the position of 12 o'clock) inside the rim is the unbalance position. Add the balance weight at this position, and then repeat the step mentioned above, e.g. add the corresponding balance weight outside the rim. Conduct the test again to display the tire balance [0] [0]. In actual operation, it is sometimes impossible to display [0]. There is a difference of ± 1 to 2 g, which is normal and acceptable.

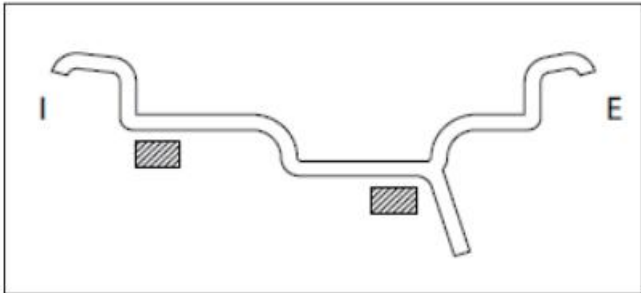
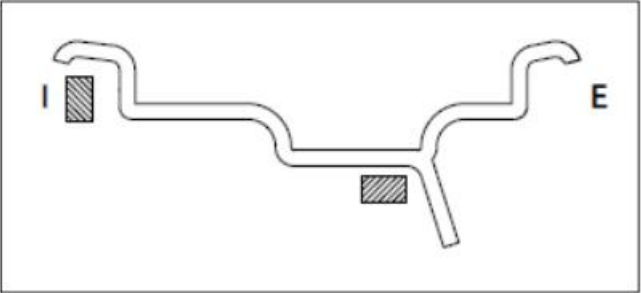
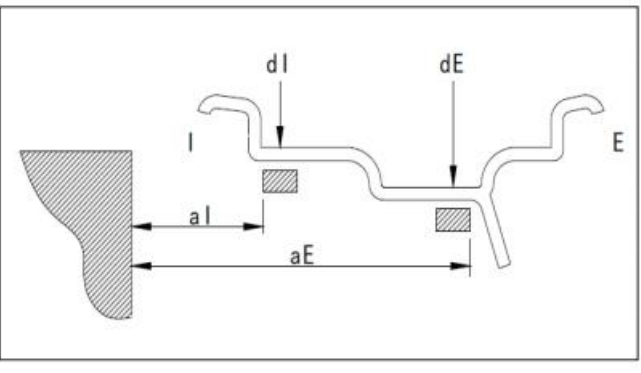
Note: Generally, the balance value of tires is displayed every 5 g, while the unbalance value less than 5 g is not displayed. After each balance operation (rotation) is completed, press [FINE] key to display the actual unbalance value.



4.4 Balance mode

If the balance weight cannot be added on both sides of the rim with the normal mode due to special balance class of tires, other balance modes shall be selected. Select various dynamic balance modes by pressing [ALU] and select static or dynamic balance modes by pressing [F]. Select the balance mode according to the position for adding the balance weight and the indicator of the balance mode.

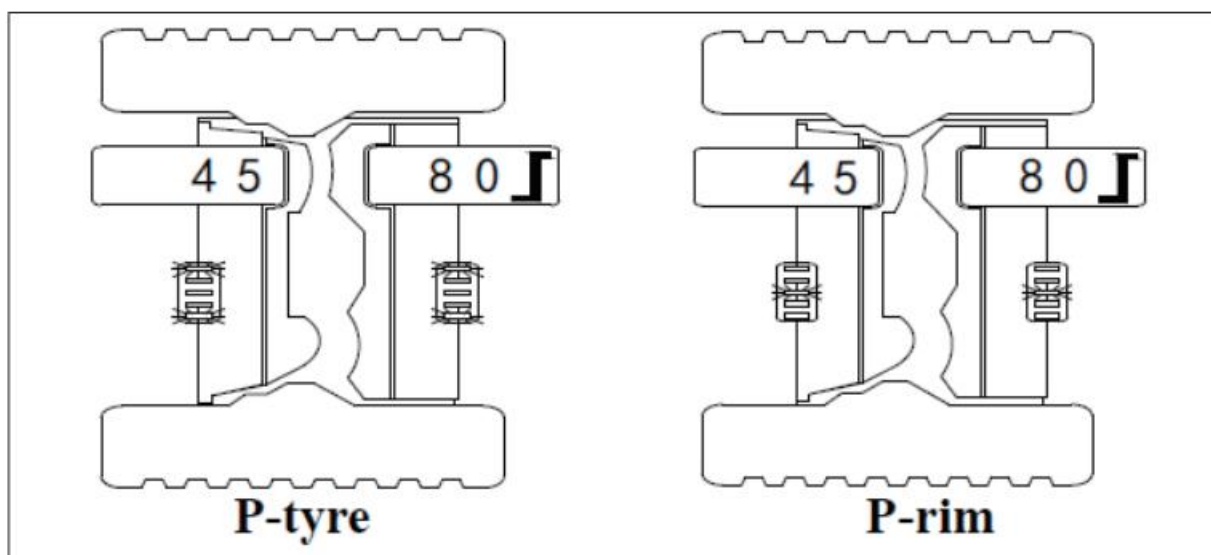
1) Norma At the position as shown in the figure, clip the balance weight on both sides of the rim, which is used for steel or aluminum alloy rims.	
2) Static For the balance of motorcycle tires or rims, the balance weight cannot be added on both sides, but shall be stuck at the position as shown in the figure.	
3) ALU1 At the position as shown in the figure, stick the balance weight on both sides of the rim.	

4) ALU2 At the position as shown in the figure, stick the balance weight inside the rim.	
5) ALU3 At the position as shown in the figure, clip or stick the balance weight inside the rim.	
6) ALU-S Mode ALU-s for rims with special profile. Press [ALU] key to toggle balancing modes , the corresponding LED of ALU-s light up on the display window on the operation panel. Press key [a ↑] [a ↓] to change aI value. Press key [b ↑] [b ↓] to change aE value. Press key [d ↑] [d ↓] to change dI value. Press and hold key [ALU], then press key [d ↑] [d ↓] to change dE value.	

7) Introduction of OPT function

When the static unbalance value of tires exceeds 30g, the function can be used to reduce the weight of the balance weight to be stuck. The steps are as follows:

1. Press the key [OPT] to display [OPT] [] on the screen.
2. Press [START] to rotate the spindle and then display [I][180] after stop.
3. Mark the rim and rubber tire, then use a tire changer to rotate the rim and rubber tire 180° and pump up the tire, then reinstall it. Finally, install it on the same position of the balancing machine.
4. Press [START] to rotate the spindle and then display [45] [80 ▮] after stop. (The display refers to the reduction percentage of the static unbalance in case of installation of the tire. e.g. stick $45 \times (1 - 0.80) = 9$ g, the tire will be balanced.)
5. Turn the tire by hand until the position display window displays as same as the Figure P-tyre, mark with the "P-tyre" at the position of 12 o'clock.
6. Turn the tire by hand until the position display window displays as same as the Figure P-rim, mark with the "P-rim" at the position of 12 o'clock.
7. Remove the rim from the balancing machine and reinstall the tire with a tire changer to match the mark P-tyre on the rim with the mark P-rim on the rubber tire, and then pump up the tire.
8. Now, the tire can be balanced with only 9 g of balance weight.



Chapter V System Calibration Procedure



Note

After initial installation, maintenance and repair of the transmission shaft and piezoelectric ceramic or replacement of the circuit board, the self-calibration procedure shall be implemented to ensure the measurement accuracy of the balancing machine.

5.1 Install a suitable tire and input the correct mechanical parameters (distance, tire diameter, tire width)



5.2 Enter the system calibration procedure by using the original operation mode (for example: press the F + C key), the system displays [CAL] [CAL].



5.3 Press the [STAERT] key to start the motor for the first time.

5.4 After the tire stops, slowly turn the tire by hand until all unbalance indicators are on.

5.5 At this point, add 100 g of lead outside the tire at the position of 12 O'clock, and press [START] to start the motor again.



5.6 After the tire stops, slowly turn the tire by hand until all unbalance indicators are on.

5.7 At this point, add 100 g of lead inside the tire at the position of 12 O'clock, and press [START] to start the motor for the third time.



5.8 Note: The 12 O'clock position for adding the lead shall be accurate. It seriously affects the correctness of the unbalance position. After the tire stops, if [CAL] [End] is displayed, the calibration is completed. If [Err] [-*-] is displayed, it means calibration in progress.



Chapter VI Routine Maintenance

6.1 Disconnect the power supply before maintenance.

6.2 Adjust the belt tension

Remove the cover, loosen the motor screw, move the motor until the belt is properly tensioned, then press down the belt with force for about 4 mm lower; tighten the screws of the motor and cover it.

6.3 Replace the fuse

Two spare fuses are provided on the power panel and can be removed from the fuse holder and replaced if damaged.

6.4 Unstable balance display

A well-balanced tire is unbalanced after reinstallation, which is not a machine display error, but is generally caused by rim reinstallation. The disalignment between two installation surfaces for rim and conical surface, or the deformation of rim hole and the large gap with the taper disc as well as looseness of fast locking nut will cause large error.

Chapter VII Common Troubleshooting Methods

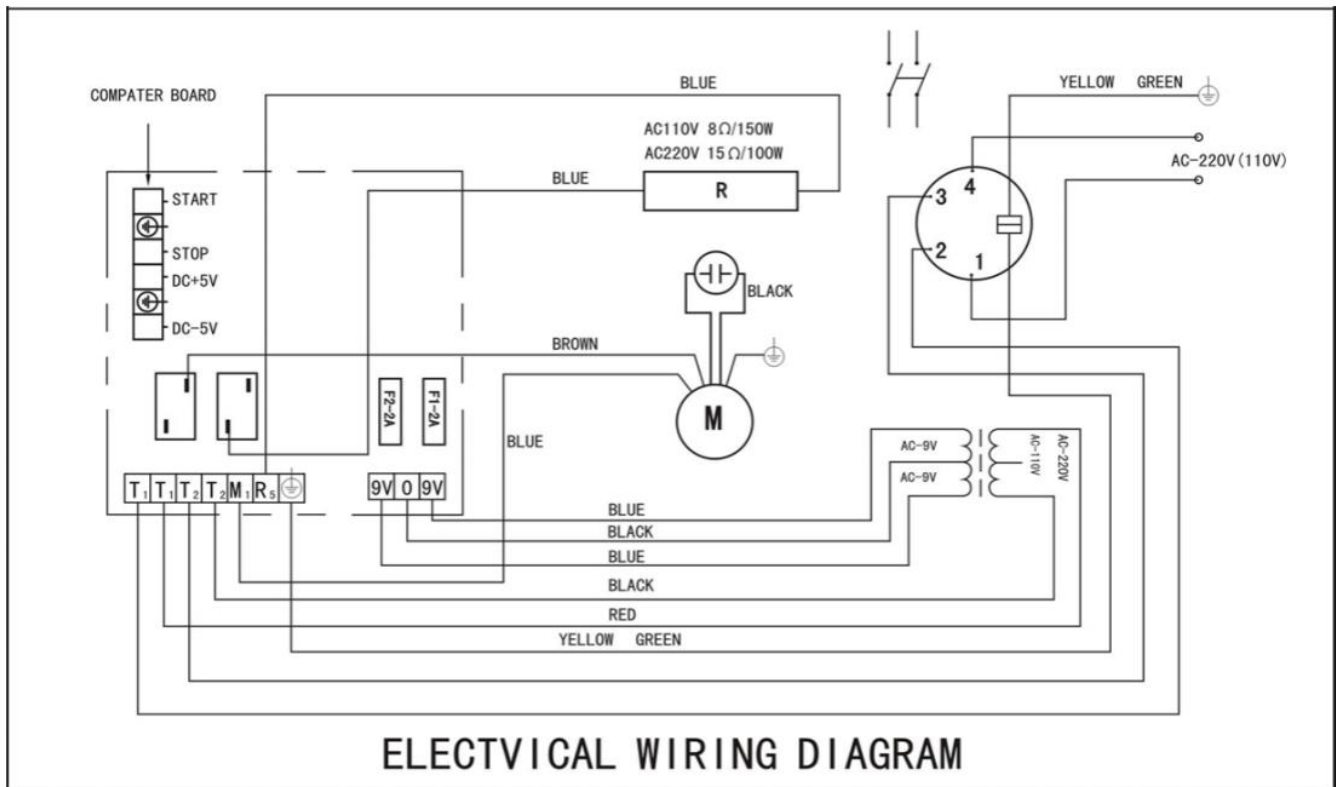
Fault phenomenon	Fault causes	Troubleshooting methods
1. Turn on the power switch	1. Check the motor for damp or electric leakage	1. Dry or replace
	2. Check the power board transformer for leakage	2. Replace
	3. Check the brake resistance for leakage	3. Replace
	4. Check whether the chassis is connected to the grounding electrode line	4. Connect the grounding electrode line properly
2. No display after starting up	1. Check the external circuit for being energized	1. Use multimeter to measure
	2. Check the power switch for being damaged	2. Replace
	3. Check the fuse on the power board for being loose or burning out	3. Tighten replace it
	4. The power supply leads of computer board are broken	4. Connect the connecting wire properly
	5. Check the power panel for being damaged	5. Replace
	6. Check the computer board for being damaged	6. Replace
	7. Check the line between the main computer board and the display board for being connected properly	7. Reconnect the connecting wire properly
3. The display is normal after startup, while the motor does not rotate when pressing the start key	1. Check the power panel for being damaged	1. Replace
	2. Check the computer board for being damaged	2. Replace
	3. Check the motor for being damaged	3. Replace
	4. Check the motor capacitance for being damaged	4. Replace

	5. Check the keyboard plate for being damaged	5. Replace
	6. Check the motor wire on the power board or the inner wire of the motor junction box for being loose	6. Fasten it
4. The motor keeps rotating after startup	1. Check the computer board for being damaged	1. Replace
	2. Check the power panel for being damaged	2. Replace
	3. Check the keyboard plate for being damaged and the position of PV board for being moved	3. Replace / adjust the position of the PV board.
5. No brake after startup	1. Check the power panel for being damaged	1. Replace
	2. Check the computer board for being damaged	2. Replace
	3. Check the brake resistance for being damaged	3. Replace
6. Display ERR1 after startup	1. Check the power panel for being damaged	1. Replace
	2. Check the computer board for being damaged	2. Replace
	3. Check the connecting wire of the position sensor for being loose or the position sensor for being damaged.	3. Re-weld or replace
7. Display ERR2	1. Check the computer board for being damaged	1. Replace
	2. Wheels are not installed	2. Install the wheel and try again
	3. Install only one rim, but not install the tire	3. Install the tire
	4. The spindle matcher is not installed tightly	4. Re-tighten the bolt
	5. The wheel is not installed correctly and is not locked	5. Choose the proper cone and install it correctly
	6. The belt is too loose or too tight	6. Re-adjust it
	7. The screw rod is stripped and the wheel is not fastened	7. Replace it and reinstall the wheels
	8. The half nut is stripped and the wheel is not tightened.	8. Replace it and reinstall the wheels
8. Display ERR3	1. Check the computer board for being damaged	1. Replace

	2. The wheel unbalance is too serious to be calculated	2. Replace the wheel and try again or conduct the self-calibration again
9. Display ERR4	1. Check the computer board for being damaged	1. Replace
	2. If it is rotated negatively, the phase lines are connected incorrectly	2. Adjust the phase lines
	3. If it is rotated positively, there is something wrong with the photoelectric sensor	3. Adjust the position again or replace it
10. Display ERR5	1. Check the computer board for being damaged	1. Replace
	2. The protective cover of wheels is not put down	2. Put the protective cover down
	3. Check the limit switch for being damaged	3. Replace
11. Display ERR7	1. Check the computer board for being damaged	1. Replace
	2. The stored data is lost	2. Input the parameters and recalibrate it
12. Display ERR8	1. Check the computer board for being damaged	1. Replace
	2. Check the power panel for being damaged	2. Replace
	3. Do not add 100 g lead when conducting self calibration.	3. Apply a 100g lead
	4. The lead of piezoelectric sensor is broken	4. Connect the connecting wire properly
	5. The piezoelectric sensor is broken	5. Replace
13. Display ERR78	1. The screw of width ruler potentiometer is loose and the data roller is disordered after pulling a and d	1. Re-adjust the potentiometer, tighten the screws, and carry out self-calibration of the measuring tape
14. Only 00-00 is displayed, and the value is not displayed	1. The lead of piezoelectric sensor is broken or in poor contact	1.Reconnect
	2. The stored data is lost	2. Re-correct memory value
	3. Check the computer board for damage	3. Replace

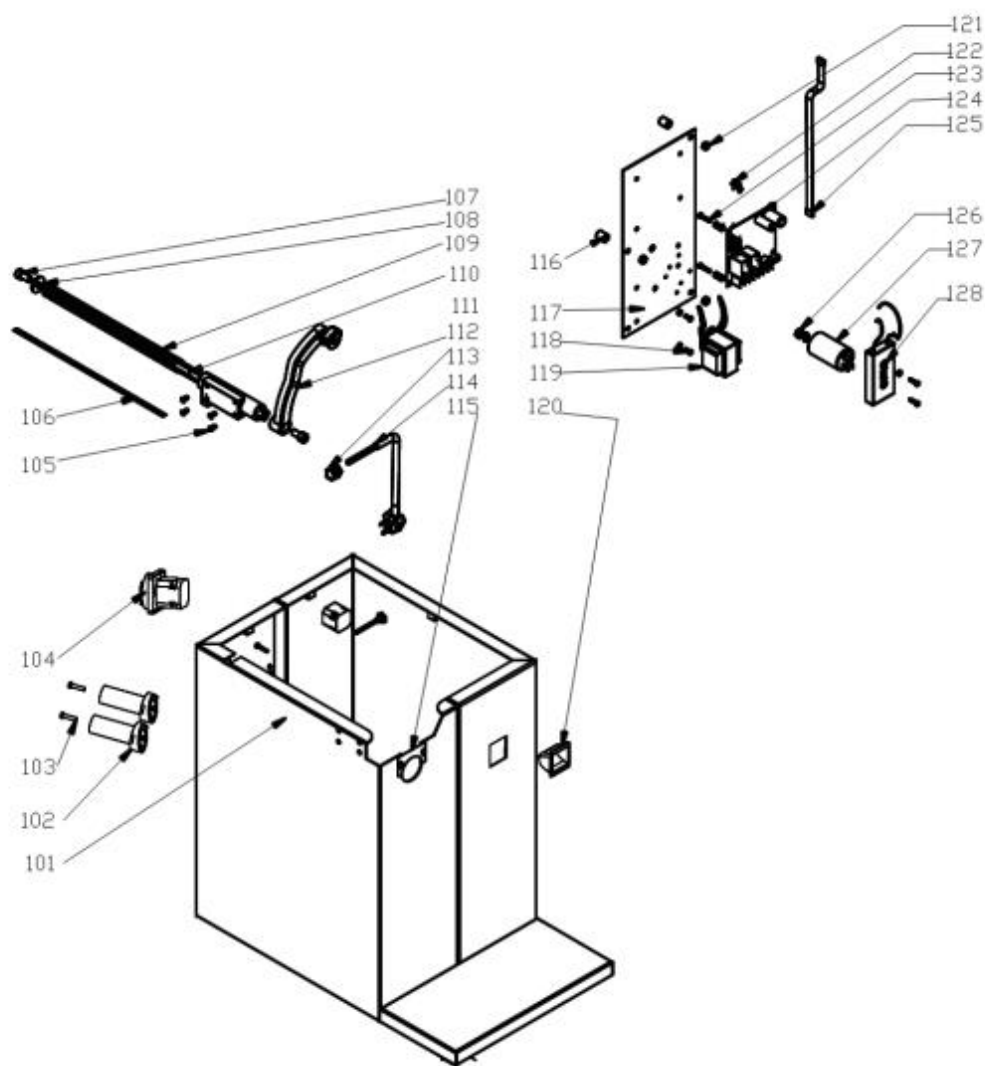
15. The value deviates after self-calibration	1. It's possible that the wheel error is large	1. Use a standard wheel. It's best to choose a well-balanced wheel
	2. The three memory parameters are confused	2. Perform self-calibration after modifying memory parameters
16. The 100g value is not displayed correctly, it is not below	1. The wheel is not standard or there are foreign matters	1. Replace with the standard balanced wheel
	2. The 100g system is not self-calibrated properly	2. 100g system self-calibration
	3. The display value is not stable	3. Replace the wheel
17. The wheel value varies by more than 5g per rotation	1. The wheel is not standard or there are foreign matters or the installation surface of rim center is deformed	1. Replace the wheel
	2. The piezoelectric sensor is damped or the locking nut is not clamped	2. Dry and readjust the piezoelectric sensor.
	3. The external supply voltage is low or the tire pressure is insufficient; matcher	3. Stabilize and inflate
	4. The ground is uneven or the machinery is unstable	4. Put it on the horizontal floor and apply anchor screw
18. The value varies by tens of grams per rotation	1. There are foreign matters on wheel or the unbalance is large	1. Replace the wheel
	2. The piezoelectric sensor is damaged	2. Check sensors and connections
	3. The external power supply voltage is low	3. Check and repair power supply or install the voltage stabilizer

Chapter VIII Circuit Diagram



Chapter IX Product Explosion Diagram

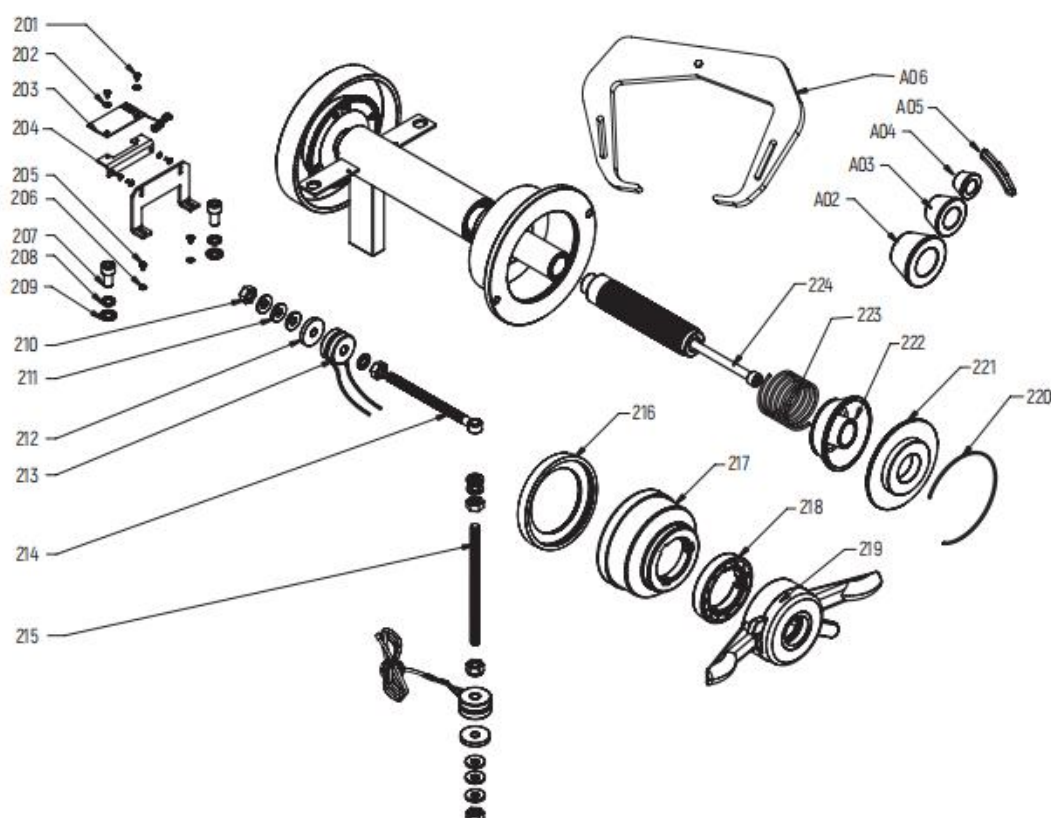
1 Chassis/ power supply/ measuring tap:



Drawing No.	Material No.	Specification name	Quantity
101	ZH20020094	Chassis	1
102	SJ11040079	Tool hanger	2
103	LS60030021	Hexagon socket head cap screw M6*25	2
104	KG90010005	Power switch	1
105	LS60010086	Cross countersunk head bolt M5*12	4
106	BC22050035	Measuring tape label 372*8	1
107	LS60010011	Hexagon socket head cap screw M10*20	2
108	DQ40010009	Galvanized flat washer	1
109	TH80010005	Measuring tape spring Φ 1.2*22*500	1
110	WJ27010018	Measuring tape 487MM	1
111	SJ11040228	Measuring tape slider sleeve	1
112	J40010074	Measuring tape handle assembly	1
113	WJ27010012	Cable screw PG11	1
114	XC19010060	Power line with plug 3*0.75*3M	1
115	JG30020902	Shaft-driven slot cover of chassis device	1
116	SJ11040208-1	ABS gasket (straight column) M6 * 15	3

117	JG30020846	Installation aluminum plate for power panel	1
118	LS60020009	Cross cup head with pad bolt M4*10	2
119	DZ25010014	Transformer 220V dual 10V 10W	1
120	SJ11040260	Plastic handle	1
121	LM70010020	Nut M6	3
122	DZ25010004	Aircraft rack	2
123	LS60020006	Cross countersunk head bolt M4*25	2
124	JG30020869	Power board (220y)	1
125	JG30020855	Power connecting wire 5 *0.3/ 1M	1
126	LM70010019	Nut M8	1
127	DZ25010208	Capacitance 10UF 450 VAC	1
128	DZ25010006-3	Ceramic brake resistance S0BB 100W15R)	1

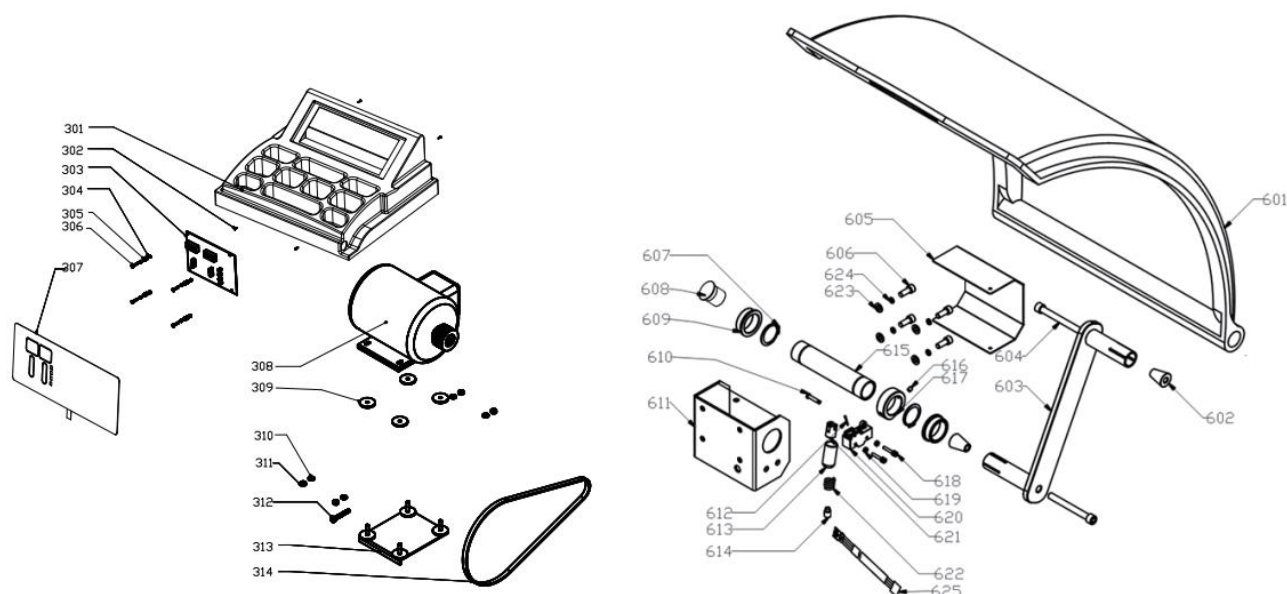
2 Transmission component device:



Drawing No.	Material No.	Specification name	Quantity
201	LS60020013	Cross cup head with pad bolt M3*6	4
202	DQ40010031	Red vulcanized paper flat washer 3*8*1	2
203	DL15010032	64-tooth photoelectric sensor + wire	1
204	DQ40010026	Outer chrysanthemum gasket M3	2
205	LS60020009	Cross cup head with pad bolt M4*10	2
206	DQ40010027	Outer chrysanthemum gasket M4	2

207	LS60010011	Hexagon socket head cap screw M10*20	2
208	DQ40020005	Elastic washer 10	2
209	DQ40010008	Flat washer 10*20*2	6
210	LM70010031	Reinforced nut M10	5
211	DQ40010013	Butterfly gasket 10*2	6
212	DQ40020013	Pressure sensor flat washer y 10*35*4	2
213	DZ25010001	Piezoelectric sensor + wire	1
214	WJ27010046	Single-headed screw	1
215	WJ27010047	Double-headed screw	1
216	SJ11040084	Rubber washer of half nut	1
217	SJ11040083	Plastic bowl	1
218	WJ27010025	Pressure ring of half nut	1
219	SJ11040155	Half nuts 36	1
220	KH50010023	Steel wire large clamp spring (large)	1
221	SJ11040082	Large cover plate (large washer piece) Φ 36	1
222	CD23010009	(Large) cone block Φ 36 (Φ 100- Φ 132)	1
223	TH80010032	Transmission shaft flange cover spring Φ 36mm	1
224	CD23010028	Φ 36-axis transmission stud M10	1
A02	CD23010010	(Second-large) cone block Φ 36(Φ 74- Φ 109	1
A03	CD23010011	(Middle) cone block Φ 36 (Φ 54- Φ 79)	1
A04	CD23010012	(Small) cone block Φ 36 (Φ 44- Φ 65)	1
A05	SJ11040025	Self-calibration lead 100g	1
A06	WJ27010023	Caliper	1

3 Motor/ upper cover plate / protective cover:



Drawing No.	Material No.	Specification name	Quantity
301	SJ11040288	Upper cover plate	1
302	LS60020024	Cross large flat head screw M4*15*12	4
303	DL15010010	Computer board	1
304	DQ40010032	Red vulcanized paper flat washer 4*8*1	8
305	LM70010022	NUt M4	16
306	LS60020020	Cross countersunk head bolt M4*20	8
307	DL15020043	Key backboard	1
308	DJ21010046	6-stage motor 220V/ 50HZ	1
309	SJ11040227	Rubber washer Φ 5.5*30*3.5	8
310	DQ40010004	Galvanized flat washer f*12*1.5	4
311	LM70010020	Nut M6	1
312	LS60010019	Hexagon socket head cap screw M6*35	1
313	ZH20020069	Power plant adjusting plate	1
314	SJ11020018	Belt (4-330)	1
601	SJ11040087	Protective cover assembly	1
602	JG30010886K	Hollow shaft locking cone sleeve of protective cover device	2
603	ZH20020085	Assembly welds of link mechanism of protective cover device	1
604	LS60010103-1	Hexagon socket head cap screw M10*90	2
605	JG30010887L	Ext. cover of protective cover device	1
606	LS60010015	Hexagon socket head cap screw M8*25	4
607	KH50010034	Circlip(lfor shaft) Φ 34	2
608	SJ11040246	Shaft plug of protective cover device	1
609	SJ11040242	Shaft plastic sleeve of protective cover device	2
610	LS60040002	pin hole bolt 5*25	1
611	ZH20020084	Mounting-set weldment of protective cover device	1
612	LM70020025	Cotter pin M2*16	1
613	JG30010889	Adjusting connected sleeve of protective cover device	1
614	LS60040015	Hexagon socket head thread M10*16	1
615	ZH20020083	Cover shaft assembly welds	1
616	LS60010046	Hexagon socket female end set bolt M6*6	1
617	JG30010888	Induction switch busher of protective cover device	1
618	LS60020018	Cross recessed countersunk head bolts M4*30	2

619	LM70010022	Nut M4	4
620	KG90010004-1	Micro switch Z-15GW22-B	1
621	JG30010879	Adjusting plate of protective cover device	1
622	TH80010054	(Circlip for shaft) Φ 16*3*23.5	1
623	DQ40020004	Elastic washerv Φ 8	4
624	DQ40010005	Flat washer Φ 8*17*1.5	4
625	XC19010077	Microswitch cable(2*0.5mm ²)	1

Warranty terms

This warranty applies only to customers and dealers who have purchased Thinkcar products through the normal course of business.

For a period of two years from the date of delivery, Thinkcar Inc. warrants its electronic products against damage caused by defects in material or workmanship. Damage to this equipment or parts caused by misuse, unauthorized alteration, use for purposes other than those for which the product was designed, or failure to operate in the manner specified in the instruction manual is not covered by this warranty. Damage to automotive gauges caused by defects in this equipment is limited to repair or replacement only, and Thinkcar is not liable for consequential or incidental damages. Thinkcar will determine the nature of the damage to the equipment in accordance with its own prescribed methods of inspection. No agent, employee, or commercial representative of Thinkcar is authorized to make any confirmation, recommendation, or promise in connection with Thinkcar products. No agent, employee or commercial representative of Thinkcar is authorized to make any confirmation, representation or promise with respect to Thinkcar products.

Waiver of Declaration

The above warranty may be substituted for any other form of warranty.

Order Notification

Replacement parts and optional accessories can be ordered directly from Thinkcar authorized dealers, please specify the quantity, part number and part name.

Customer service center

If you encounter any problems during the operation of the equipment, please call: 1-909-757-1959.

When the equipment needs to be repaired, please send it to Thinkcar with the warranty card, product certificate, purchase invoice and a description of the problem. If the equipment is within the warranty, Thinkcar will repair it free of charge; if the equipment is outside the warranty, Thinkcar will charge for the repair and add the return shipping cost.

Thinkcar Company Address:

720 S Rochester Ave Unit B, Ontario, CA 91761 USA.

Customer Service Email: service@thinkcar.com

Thinkcar website: www.thinkcar.com

Statement:

Thinkcar reserves the right to change product design and specifications without prior notice. The appearance and color of the actual product may differ from that shown in the manual, please refer to the actual product. We have tried our best to make all the descriptions in the book accurate, but there are still some inaccuracies, if you have any questions, please contact the dealer or Thinkcar after-sales service center, the company does not assume any responsibility for any misunderstandings arising from the consequences.