
Wheel Balancer Manual(A)

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1. General

- Before starting to use the balancing machine, carefully read the operating instruction manual.
- Keep the manual in a safe place for future reference.
- Forbid removing or modifying machine parts as this would impair correct operation.
- Do not use strong jets of compressed air for cleaning.
- Use alcohol to clean plastic panels or shelves (AVOID LIQUIDS CONTAINING SOLVENTS).
- Before starting the wheel balancing cycle, make sure that the wheel is securely locked on the adapter.
- The machine operator should not wear clothes with flapping edges. Make sure that unauthorized personnel do not approach the balancing machine during the work cycle.
- Avoid placing counterweights or other objects in the base which could impair the correct operation of the balancing machine.
- The balancing machine should not be used for purposes other than those described in the instruction manual.

1.1. Technical data:

- Max wheel weight: 65kg
- Power: 200w
- Power supply: 220v50hz
- Balancing accuracy: $\pm 1g$
- Balancing speed: 200r/min
- Cycle time: 8s
- Rim diameter: 10 " ~24 " (256mm~610mm)
- Sound pressure level during work cycle: <70db
- Net weight: 98kg

1.2. Features:

- Automatic distance and diameter measuring
- Statistic and dynamic balancing, ALU-programs for alloy rims or special shaped
- Self diagnoses, easy to find the problem
- Apply to steel and aluminum alloy rim

1.3. Working environment:

- Temperature: 5~50°C
- Height: $\leq 4000m$
- Humidity: $\leq 85\%$

2. Machine assembly

2.1. Unpack

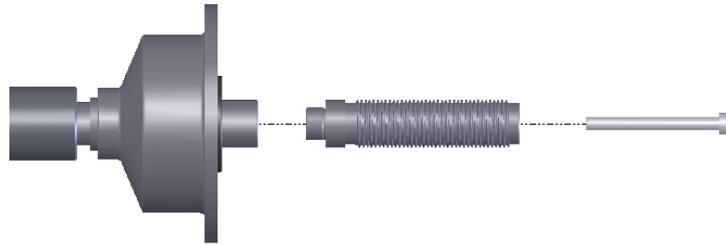
Unpack the carton, check if missing any spare parts.

2.2. Install

- The machine can only work on flat floor, otherwise it is not accurate.
- Leave 5 m² around the balancer for easy operation.
- Fix balancer to floor with screws on the bottom.

2.3. Adaptor mounting

The wheel balancer is supplied complete with cone type adaptor for fastening wheel with central bore. (see below picture)



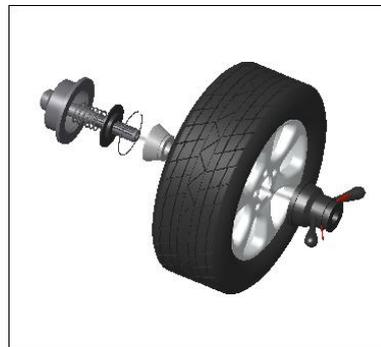
2.4. Install wheel

Clean wheel, take off counterweights, check pressure of wheel.

Choose the way of installation according to the type of wheel.



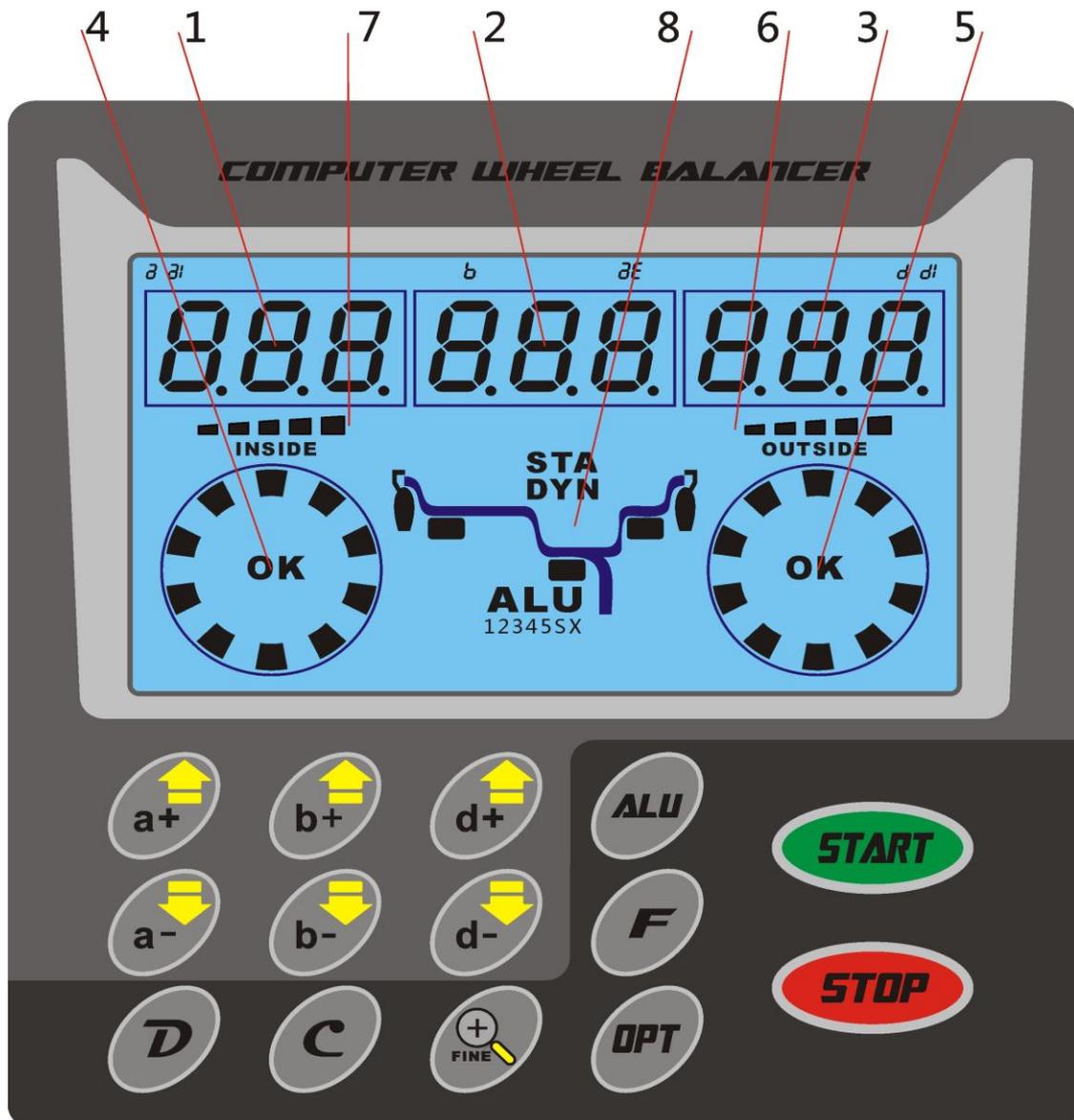
Main shaft-wheel—
suitable cone(small head towards inside)—quick handle nut



Main shaft-suitable cone(big head towards inside)
—wheel—quick handle nut

Attention: when installing or taking off wheel, do not let wheel move on the shaft, to avoid scratching shaft.

3. Controls and component



1. Digital readout of "a", distance dimension, inside amount of unbalance
2. Digital readout of "b", width dimension
3. Digital readout of "d", diameter dimension, outside amount of unbalance
4. Digital readout, inside position of unbalance
5. Digital readout, outside position of unbalance
6. Indicator bar for ruler when pull out ruler for outside position
7. Indicator bar for ruler when pull out ruler for inside position
8. "ALU" correction mode selected, can choose following different modes: (finishing input "a" "d" "b", press ALU to choose following modes)



DYN mode(standard mode)-Balancing steel or light alloy wheels with application of clip-on weights on the

rim edges. (Default mode)

Press "ALU" button can choose:



ALU1 mode, Balancing of light alloy rims with application of the inner adhesive weight. Outer weight position is on the adapter surface.



ALU2 mode, Combined application: clip-on weight outside and hidden adhesive weight on inside..



ALU3 mode, Adhesive weight on inside and outside



ALU4 mode, Combined application: clip-on weight inside and adhesive weight on outside.



ALU5 mode, Combined application: hidden adhesive weight on inside, clip-on weight outside



ALUS mode, For balancing special shape wheel rim. (Pull gauge to stop at the first position for 3 seconds, then pull second position for 3 seconds.)

Press F can choose:



Static mode, for motorcycle wheels (finishing input "a" "d" "b", press F to choose this mode)

Key Functions

Divided into one-touch operation and the combination of key operation

One-touch operation.



: Push button, manual distance (a) setting



: Push button, manual width (b) setting

  : Push button, manual diameter(d) setting

 : Push button for recalculation and self-calibration

 : Push button for static mode

 : Push button, self-diagnostics, self-calibration

 : Push button, unbalance display pitch and threshold

 : Push button, selection of "ALU" mode of correction

 : Push button, start

 : Push button, emergency and selection of special function

 : Push button, optimization of unbalance and split unbalance

 +  : Self-calibration

 +  : Inch/mm change

4. Indication and use of wheel balancer

4.1.: Turn on machine, choose right way to install wheel according to the type of wheel.

4.2.: Set "a" "b" "d" values:

- set "a" value: move the gauge to measuring position as illustrated as Fig.1, hold the gauge still in position for approx. 4 seconds, successful memorization is given, then return the gauge to position 0. (The value measured in automatic mode appear on the display). Or press  and  to set manually.

- set "b" value: set nominal diameter "b" marked on the wheel or use the width gauge to measure the value of "b" as Fig.2, then press  and .

- set "d" value: this value measured in automatic mode same time as "a" value setting, or press  and  to set manually.

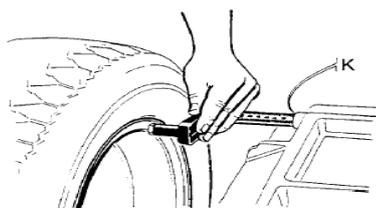


fig. 20b

Fig. 1

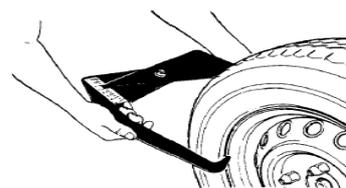


fig. 20a

Fig. 2

4.3. Choose balancing mode according to wheel type, if choose DYN mode(standard mode), no need to press ALU, jump to 4.4, otherwise press ALU to choose.

4.4. Press [START] or close the guard to perform a measuring spin.

4.5. In a few seconds the wheel is brought to operating speed and begin measuring unbalance, the unbalance values remain on instruments 1 and 4 when the wheel stopped. Press [FINE] may check the real unbalance value under threshold.

4.6. Anticlockwise moving wheel slowly, the displays with right LED's lit up full indicate the correct angular position where to mount the counterweights (12 o'clock position) outside, as Fig.3.

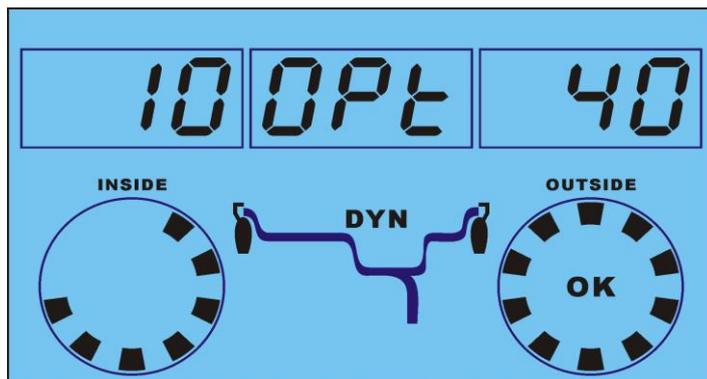


Fig. 3

4.7. Anticlockwise moving wheel slowly, the displays with left LED's lit up full indicate the correct angular position where to mount the counterweights (12 o'clock position) inside, as Fig.4.

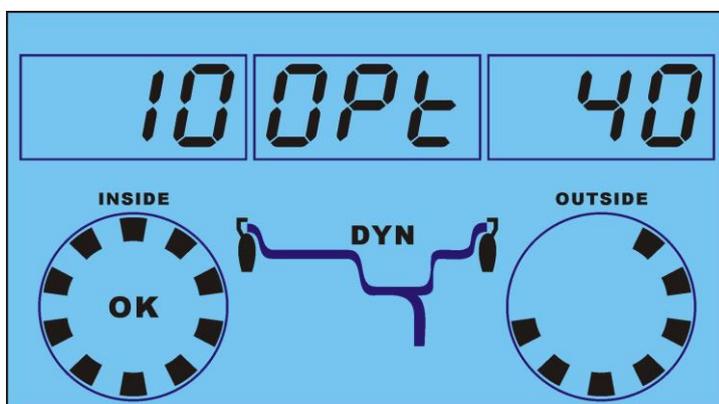


Fig. 4

4.8. After finishing mounting the counterweights, press [START], perform balancing spin again, if comes out 00 00, means balancing succeed.

5. Self-calibration of wheel balance

Attention: Do the self-calibration Before the first using or whenever you think the balancer is not accurate. The 100g counterweights must be very accurate.

Turn on balancer, install a medium size wheel(13" -15"), set "a b d" value, press **⏪**+ **D** , comes out **CAL.CAL.CAL.** until the positioning LED's change from flashing into steady. Press <START>, after spin stops, comes out **Add 100** , add a 100 gram weight on the outside in any angular position. Press <START>, spin again, after the spin stops, comes out **CAL.End** , self-calibration finished.

6. Calibration of automatic gauges

6.1.Rim distance gauge calibration

Do the gauge calibration whenever you think it is not accurate or when gauge is in position 0, the LED's kept flashing

(Fig.5)



Fig. 5

Step one: Pull gauge to position 4cm, as Fig.6

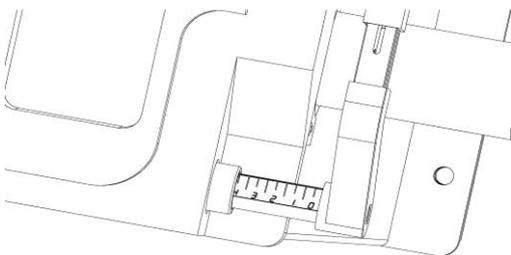


Fig. 6

Step two: after Fig.5 comes, press STOP+FINE, then comes Fig.7, shift the distance gauge to position "0" and keep it quite still (as Fig.8), press ALU to confirm.



Fig. 7

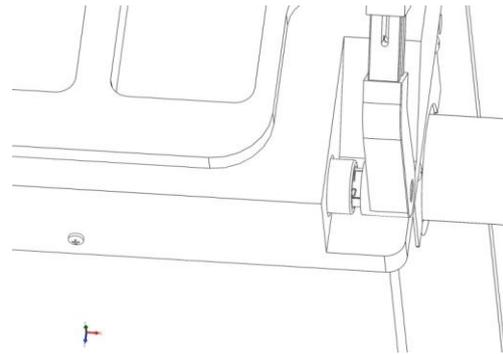


Fig. 8

Step three: comes Fig.9, move the gauge to position "15"(as Fig.10) and press ALU to confirm, comes 000 000 000 means Rim distance gauge calibration done.



Fig. 9

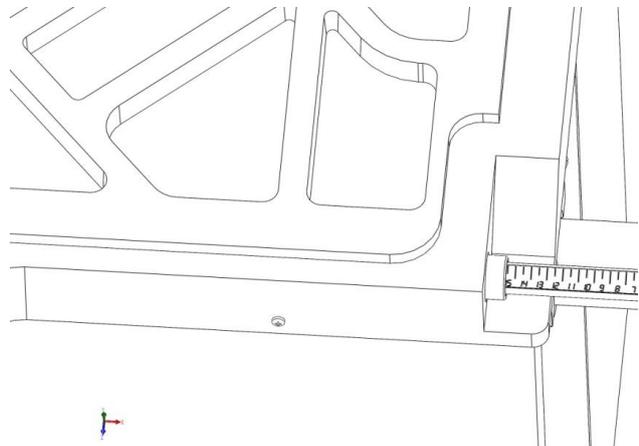


Fig. 10

6.2. Rim diameter gauge calibration

Set "d" by press   , (for example if it is 16 inch, make it 16), press stop+opt comes Fig.11, move gauge to touch the edge of rim and keep still (as Fig. 12), press ALU twice.



Fig. 11

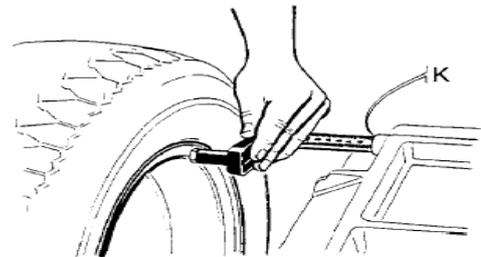


fig. 20b

Fib.12

Rim diameter gauge calibration done.

7. Self-diagnoses

Press **D**, each LED lights one by one, when finish, comes Fig.13



Fig.13

POS tests position sensor, turn around the shaft (or wheel) by hand, the data will change from 0-63, means the sensor is ok, press ALU comes Fig.14.



Fig.14

Dis tests distance potentiometer, when return gauge to position 0, left window data is 28-33, when pull gauge out, the data changes, means distance potentiometer is ok, press ALU comes Fig. 15.



Fig. 15

Dia tests diameter potentiometer, move gauge on position as Fig.16, left window data is 28-33, turn ruler to another direction as Fig.17, data changes, means diameter potentiometer is ok, press ALU comes Fig.18

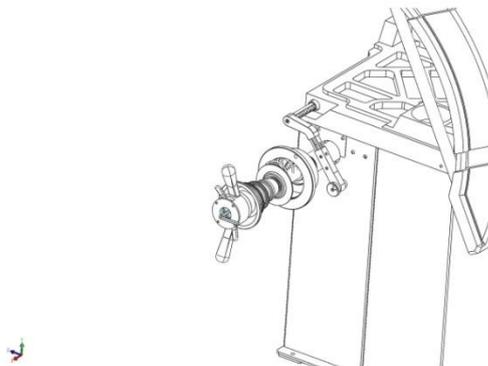


Fig.16

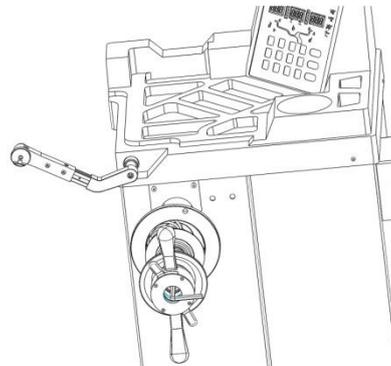


Fig.17



Fig. 18

5x ad 5x test inner and outer pressure sensor, press shaft by hand, left window and right window data changes, means the pressure sensor is ok, press ALU, back for operation.

8. Computer board replacement

If change computer board, must change "dF/l/S" value (marked on the sticker inside machine).

Press $\boxed{C} + \boxed{D}$, comes , then press $\boxed{a-} \rightarrow \boxed{a+} \rightarrow \boxed{ALU}$, comes

, by pressing $\boxed{b+}$ and $\boxed{b-}$ can change the data in the middle, press $\boxed{a+}$ comes

, by pressing $\boxed{b+}$ and $\boxed{b-}$ can change the data in the middle, press $\boxed{a+}$ comes

, by pressing $\boxed{b+}$ and $\boxed{b-}$ can change the data in the middle, press $\boxed{a+}$, back for operation, before do the balancing, self-calibration must be done.

9. G/OZ change

When need to change the unit, press $\boxed{STOP} + \boxed{a+}$ when screen like Fig. 19, it comes Fig. 20

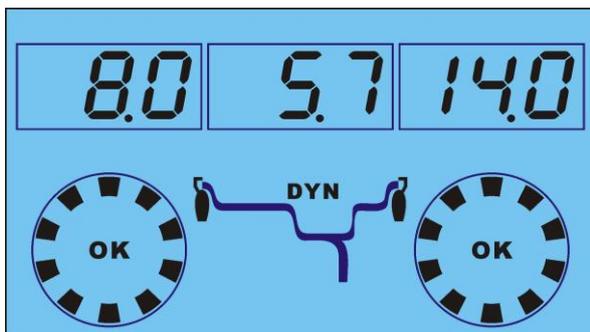


Fig. 19

Fig. 20 press $\boxed{b+}$ and $\boxed{b-}$ can change right side, press $\boxed{a+}$ can save the unit as gram and back to Fig. 19.

Fig. 21 press $\boxed{b+}$ and $\boxed{b-}$ can change right side, press $\boxed{a+}$ can save the unit as oz and back to Fig. 19.

 Fig. 20

 Fig. 21

10. ALUS mode

This balancing mode is used for special rim, when ALU1 and ALU2 can not be used, you should choose ALUS mode.

Pull gauge out let the gauge head touch the position of FI for 4 seconds, after the confirmation sound, pull gauge more to position of FE and keep for 4 seconds, after comes Fig.23, return gauge.

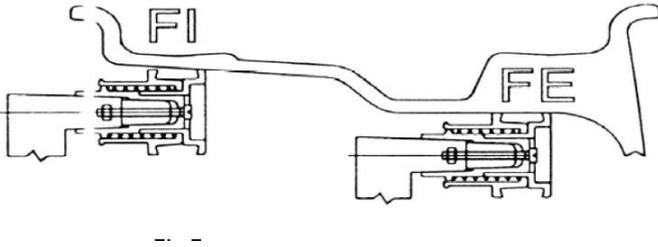


Fig.22



Then press START or turn down safe guard, start spin, after spin finish, there are following two ways to operation.

10.1. Add weight without gauge

Add proper weight according to the screen, to the position of FI and FE, refer the way in 4.5-4.8

10.2. Add weight with the help of gauge

When in Fig. 24, press [STOP] + [ALU], change to Fig.25

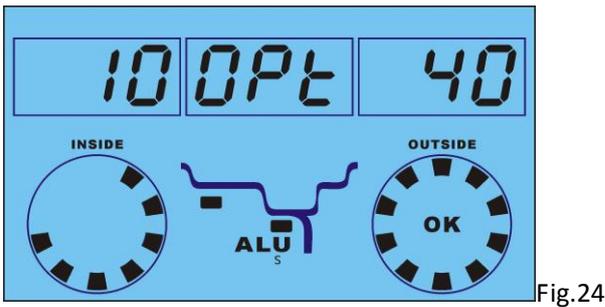


Fig.24

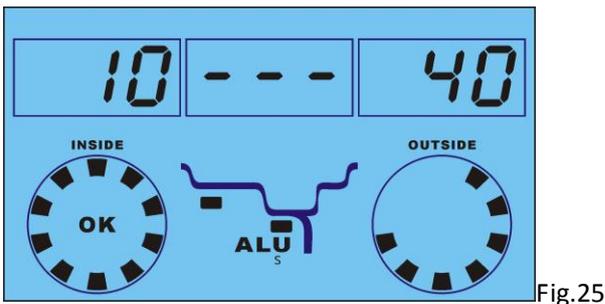


Fig.25

10.2.1. Rotate wheel by hand until the left flash bar light full (Fig. 25), put proper weigh on the gauge head,

(Fig.26), pull until there is a square turn out like Fig.27, stick the weight on the rim.

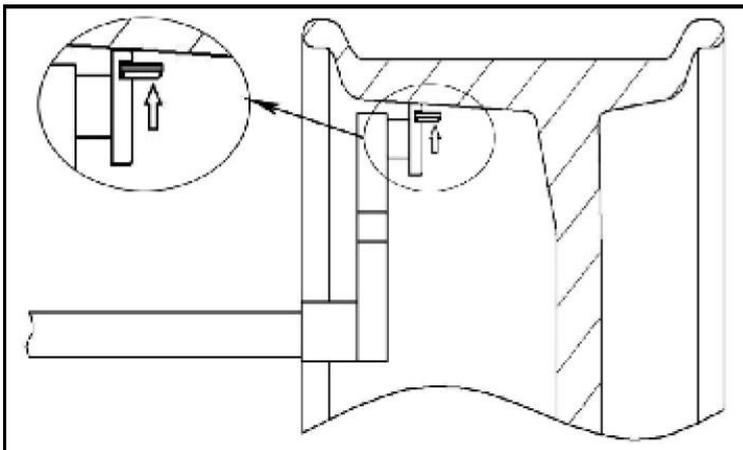


Fig. 26

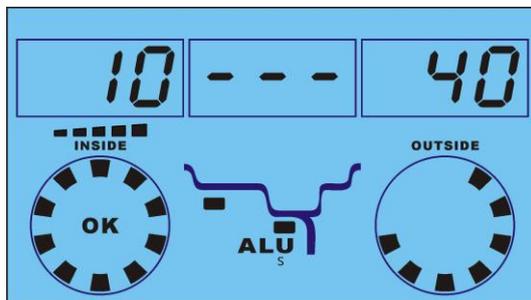


Fig. 27

10.2.2. Rotate wheel by hand until the right flash bar light full (Fig. 28), put proper weigh on the gauge head, (Fig.26), pull until there is a square turn out like Fig.29, stick the weight on the rim.

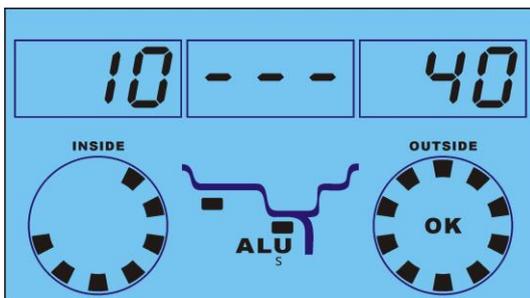


Fig. 28

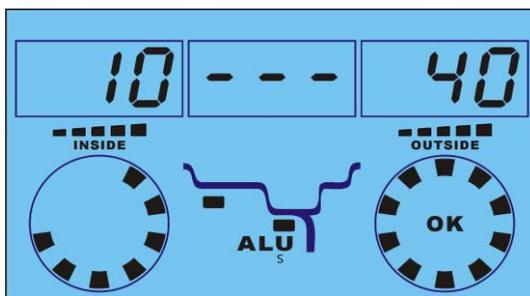


Fig. 29

Then press START or put down safe guard, comes Fig. 30 means the wheel is balanced,

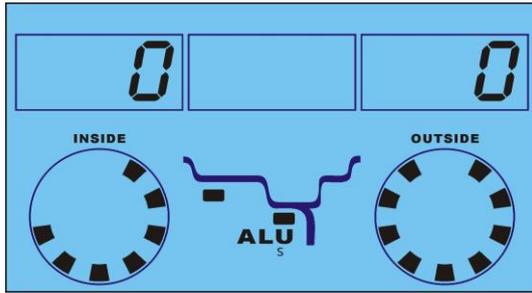


Fig.30

11. ALUS split function

When in ALUS mode, after measured FI and FE, press D+OPT comes Fig. 31 asking to input number of spokes, press b- or b+ to change, press, D+OPT to save, press START or put down safe guard, after spin finish, do as 10.1to 10.2.2



Fig. 31

12. Errors

Various abnormal conditions can arise during machined operation by the microprocessor, if comes the errors,must stop operation, find the reason and the solution according to below forms, if the error persists, consult the supplier.

Error	Reason	Solution
1	No signal for spin, problem of Position Pick-up Board or Power Board	If shaft can spin comes error1, change Position Pick-it Board; If shaft can not spin comes error1, change Power Board
2	Not install wheel or belt too tight	Install wheel or adjust belt
3	Wheel not installed tightly or pressure inside wheel not enough	Install wheel tightly or add proper pressure in wheel
4	Problem of Position Pick-up Board	Adjust or change Position Pick-up Board
5	Safe Guard problem	Adjust or change micro-switch
6	Problem of Power Board	Change Power Board
7	Program lost	Change computer Board
8	problem of Pressure Sensor or not add 100g weights during self-calibration	Do self-calibration according to manual, if still error, change Position Pick-up Board